

PENFABCO. LTD.

TRAVEL SHEET FOR PRESSURE VESSELS FABRICATION & REPAIR / ALTERATION

VESSEL SIZE & DESCRIPTION

SERIAL NO. PE 13306

CRN: V7840.21

VESSEL TITLE Vertical Separator

VESSEL SIZE: 24" O.D. x 10' 0" w/h

"A" NUMBER

VESSEL DESIGN PRESSURE: 1440 PSIG

DWG. NO. & REV. PE 13306 Rev 1

ITEM	COMMENTS	DATE INSPECTION COMPLETED & INITIALS		
		3 RD PARTY	O.C.M.	A.I.
TRAVEL SHEET REVIEWED BY A.I.		03/21/14	MAR 21 2014	MAR 21 2014
CALCULATIONS ON FILE	PE-15002 Shrs 1,2 Rev 3	03/21/14	MAR 21 2014	MAR 21 2014
DESIGN DRAWINGS APPROVED BY ABSA	PE-15002 Shrs 1,2 Rev 3	03/21/14	MAR 21 2014	MAR 21 2014
PRODUCTION IMPACT TEST - COUPONS	-20 °F	03/21/14		
WPS(s) CHECKED	PEN-19LT-1 RI	03/21/14	MAR 21 2014	
WELDERS QUALIFIED		03/21/14	MAR 21 2014	
MATERIAL CHECKED AGAINST DRAWING		03/21/14	MAR 21 2014	
HEAT NO'S, THK. RECORDED ON MAT'L REPORT		03/21/14	MAR 21 2014	MAR 21 2014
MILL TEST REPORT VERIFIED TO COMPLY WITH CODE		03/21/14	MAR 21 2014	MAR 21 2014
VESSEL LAYOUT		03/21/14	MAR 21 2014	
FIT UP - SHELL & HEADS		03/21/14	MAR 21 2014	
FIT UP - NOZZLES & FITTINGS (UG-93)		03/21/14	MAR 21 2014	
TRAYS, BAFFLES & OTHER INTERNALS CHECKED		03/21/14	MAR 21 2014	
INTERNAL CHECK & INSPECTION		03/21/14	MAR 21 2014	MAR 21 2014
WELDER'S I.D. & WELD SIZES & PROFILE VERIFIED		03/27/14	MAR 27 2014	MAR 27 2014
RADIOGRAPHS	RT-2	03/27/14	MAR 27 2014	MAR 27 2014
OTHER N.D.E.	Preheat to 50° F	03/27/14	MAR 27 2014	
NOZZLES & FITTINGS - RATING & ORIENTATION		03/27/14	MAR 27 2014	
CLOSING CIRC SEAM CHECKED & INSPECTED		03/27/14	MAR 27 2014	
EXTERNAL AFTER COMPLETION OF ALL WELDING	MANDATORY HOLD POINT FOR ALL PWHT VESSELS	03/27/14	MAR 27 2014	MAR 27 2014
ANY NON-CONFORMITIES				
HEAT TREATMENT CHECKED	N/A			
HYDROSTATIC TEST <u>GAUGES G7, G8</u>	2160 Psig	03/27/14	MAR 27 2014	MAR 27 2014
NAME PLATE		03/27/14	MAR 27 2014	MAR 27 2014
MANUFACTURERS' DATA REPORT	UIA	03/27/14	MAR 27 2014	MAR 27 2014



AUTHORIZED INSPECTOR HOLD POINTS DESIGNATED BY: "H" for Hold, "I" for Inspection, "R" for Review, "W" for Witness

PENFABCO LTD.

MATERIAL REPORT

SERIAL NUMBER PE 13306 TYPE OF VESSEL Vertical Separator

1

3

2

DATE (Month/Day/Year) 17-Mar-14 CUSTOMER Husky c/o RJV FILLED BY M.B. DWG NO. PE-13306
Rev. 1

ITEM	DIA	ITEM NO.	HEAT NO.	SLAB NO.	MATERIAL SPEC.	REQ'D THK	VER THK
Top Head	24"	1	381402	35205-02 ☒	SA-516-70N	.9375"	0.985"
Bottom Head	24"	2	381402	35205-02 ☒	SA-516-70N	.9375"	0.983"
Shell	24"	3	362477	12841 ☒	SA-516-70N	1.000"	1.026"
Pad Support		25	SE1310354302		G40.21-44W (Rd)	.500"	
Vortex Brkr,Flt Shield		23, 24	115941		G40.21-44W (PI)	.250"	
PIPE - Nozzles, Drains Etc.						SCH	NOM.THK
Skirt	24"		923078		SA-106B	Std	.375"
Neck	2"	N3	575122		SA-106B	XXH	.436"
Neck	2"	N10	20444		SA-106B	160	.343"
FLANGES AND FITTINGS						SCH	RATING
RF LWN x 9"	3"	N1,N2,N11	G859		SA 105N		CL 600
RF LWN x 9"	3"	N12 to N14	G859		SA 105N		CL 600
RFWN	2"	N3	TL10005612		SA 105N	XXH	CL 600
RFWN	2"	N10	12/30773		SA 105N	160	CL 600
Cplg	1"	C5,C6	4246		SA 105N		CL 6000
Cplg	3/4"	C2,C3A/B	3982		SA 105N		CL 6000
Cplg	3/4"	C4A/B	3982		SA 105N		CL 6000
Cplg	1/2"	C1	3933		SA 105N		CL 6000
Elbow	2"	N10	13E00064		SA-234-WPB	160	



the pressure equipment safety authority

9410 - 20 Ave N.W.
Edmonton, Alberta, Canada T6N 0A4
Tel: (780) 437-9100 / Fax: (780) 437-7787

January 21, 2014

Attention: Marg Bazin
PENFABCO LTD
5715 56 AVENUE NW
EDMONTON, AB T6B 3G3

The design submission, tracking number 2013-09617, originally received on December 24, 2013 was surveyed and accepted for registration as follows:

CRN : V7840.2

Accepted on: January 21, 2014

Reg Type: Revision To accepted Design

Drawing No. : PE-15002 SHTS 1,2 Rev 3

Design registered in the name of : PENFABCO LTD

Description	MAWP	Design Temperature	MDMT
Internal Pressure	9928kPa	54 °C	-29 °C

An invoice covering survey and registration fees will be forwarded from our Revenue Accounts.

If you have any question don't hesitate to contact me by phone at (780) 433-0281 ext 3369 or fax (780) 437-7787 or e-mail Radisavljevic@absa.ca.

Sincerely,

Zana Radisavljevic

RADISAVLJEVIC, ZANA, R.E.T.





edmonton exchanger
& manufacturing ltd.

CERTIFICATE OF COMPLIANCE

5545-89 Street Edmonton, Alberta Canada T6E 5W9

www.edmontonexchanger.com

tel 780.468.6722 • QC fax 780.466.4668 • sales fax 780.466.5155

Customer RJV GASFIELD LTD.

Po 3088

Work Order C102744 Date 2014/02/22 ColC# 47423 Page 1 of 1

Item#	Description	Qty	Heat#	Brinell Hardn.	Required Min Thk	Recorded Min Thk	Form. Proc.
H102744-2	HEAD(S) - Semi-Elliptical 2:1 - 1.0000" NOM (0.9375" MIN) X 24" OD (Material Spec: SA 516-70 Normalized)	2	SQ11705-A407669-01	MTR	0.9375"	0.9380"	1
		5	381402-35205-02	MTR	0.9375"	0.9380"	1
	Conforms to NACE MR0175 / ISO 15156-2 2009 Annex A Conforms to NACE MR0103 2007	1	381402-35217-02	MTR	0.9375"	0.9480"	1

Forming Procedure:

1. Hot Formed @ 1650F/899C and Air Cooled

Brinell Equipment: Newage Calibrated Pin
Brinell Hardness Tester

Supplementary Requirements**Normalized Material Identification Marking:**

'MT' indicates normalized by the mill per ASME Code Section II, Part A, SA 20, Paragraph 13.1.1.

'GMT' indicates normalized by Edmonton Exchanger per ASME Code Section II, Part A, SA 20, Paragraph 13.1.2.

'GT' indicates normalized by Edmonton Exchanger per ASME Code Section VIII Division 1, UG-85 or ASME Code Section I, PG-77.4.

The item(s) listed above comply with the requirements of ASME Code Section I, PG-29, PG-81 and ASME Code Section VIII, Division 1, UCS-79(d), UG-79 & UG-81. All welders and procedures are qualified to ASME Code Section IX. Material being supplied conforms to the latest ASME Code Section II, Part A, 2013 Edition.

Supplementary Examination - Items

PE-13304 T&B

PE-13305 T&B

PE-13306 T&B

PE-13307 TOP

PE-13307 BTM



CONFORMANCE VERIFIED

TO ASME VIII-DIV 1

CODE: ED 2013 A

DATE: Mar 3/14

BY: MB



edmonton exchanger
& manufacturing ltd.

CERTIFICATE OF COMPLIANCE

MTR List

5545-89 Street Edmonton, Alberta Canada T6E 5W9 www.edmontonexchanger.com tel 780.468.6722 • QC fax 780.466.4668 • sales fax 780.466.5155

Customer RJV GASFIELD LTD. PO 3088 Work Order C102744 Date 2014/02/22 CofC# 47423 Page 1 of 1

MTR ID	Pages	Heat#	Thickness	Material Grades
17668	9	381402-35205-02	1"	SA 516-70 N
		381402-35217-02	1"	SA 516-70 N
18214	8	SQ11705-A407669-01	1"	SA 516-70 N

Heat#	Material Grades	MTR ID
381402-35205-02	SA 516-70 N	17668
381402-35217-02	SA 516-70 N	17668
SQ11705-A407669-01	SA 516-70 N	18214

Heat#	Thickness	Grade	HIC Report Filename
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QM-System: Certification as per ISO 9001

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.de/certificate)



DILLINGER HÜTTE

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004		A10 Advice of dispatch No./ Date of dispatch	A08/ Manufacturer's order/ A03 Certificate No.	Sheet
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		445070-07.02.13	380705-001	1/...
MATERIAL TEST REPORT (MTR)				
A05 Established inspecting body DH	A06 Purchaser EDMONTON STEEL, EDMON	A07.1 No. ED10610-J1010-ER		
	Final receiver EDMONTON STEEL, EDMON	A07.2 No.		
B02/ Steel design. SA516-70	SA20-S5			
B03 Any suppl. requirements	ASME-IIA:2010+ADDENDA-2011A DIL-HUE-2-R33-2012-10-01			



B01-B99 Description of the product

B14 Item No.	B08 Number of pieces	B09 Thickness	B10 Width	B11 Length	B12 Theoretical mass	B04 Product delivery condition	B07.2 Heat No.	B07.1 Rolled plate Test No.	A09 Purchaser article number
			INCH		KG				
01	1	0,6250 x	150,00000 x	450,00000 x	5427	N	381401	35303-01	
01	1	0,6250 x	150,00000 x	450,00000 x	5427	N	381401	35303-02	
01	1	0,6250 x	150,00000 x	450,00000 x	5427	N	381401	35304-01	
01	1	0,6250 x	150,00000 x	450,00000 x	5427	N	381582	59860-01	
**	4				21708				
02	1	0,7500 x	150,00000 x	451,00000 x	6527	N	381402	35234-01	
02	1	0,7500 x	150,00000 x	451,00000 x	6527	N	381402	35234-02	
**	2				13054				
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	381397	35309-01	
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	381397	35309-02	
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	381397	35311-01	
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	381397	35311-02	
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	381397	35311-03	
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	381401	35306-03	
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	381402	35220-01	
03	1	0,8750 x	120,50000 x	480,00000 x	6510	N	381402	35220-02	
**	8				52080				
04	1	0,8750 x	150,00000 x	451,00000 x	7615	N	381401	35306-01	
04	1	0,8750 x	150,00000 x	451,00000 x	7615	N	381401	35306-02	
04	1	0,8750 x	150,00000 x	451,00000 x	7615	N	381402	35216-01	
04	1	0,8750 x	150,00000 x	451,00000 x	7615	N	381582	54939-01	
**	4				30460				
05	1	1,0000 x	96,50000 x	480,00000 x	5959	N	381402	35206-01	

CONFORMANCE VERIFIED
TO ASME VIII-DIV I
CODE: ED 2013 A
DATE: 27.02.2014
BY: MIB

Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.



B. Balz
AHB

AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

B. BALDAUF
Test House Manager

Inspector's stamp

Date 07.02.13

pp 1

QM-System: Certification as per ISO 9001

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.de/certificate)



A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004		A10 Advice of dispatch No./ Date of dispatch	A08/ Manufacturer's order/ A03: Certificate No.	Sheet
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		445070-07.02.13	380705-001	2/...
MATERIAL TEST REPORT (MTR)				
A05 Established inspecting body	A06 Purchaser	B01 Product		
DH	EDMONTON STEEL, EDMON	HEAVY PLATES		
Final receiver				
EDMONTON STEEL, EDMON				
SA20-S5				
B02/ Steel design.	SA516-70			
B03 Any suppl. requirements	ASME-III: 2010+ADDENDA-2011A			
	DIL-HUE-2: R33-2012-10-01			

B01-B99 Description of the product

B14 Item No.	B08 Number of pieces	B09 Thickness	B10 Width	B11 Length	B12 Theoretical mass KG	B04 Product delivery condition	B07.2 Heat No.	B07.1 Rolled plate Test No.	A09 Purchase article number
05	1	1,0000 x	96,50000 x	480,00000 x	5959	N	381402	35206-02	
05	1	1,0000 x	96,50000 x	480,00000 x	5959	N	381402	35207-01	
05	1	1,0000 x	96,50000 x	480,00000 x	5959	N	381402	35207-02	
05	1	1,0000 x	96,50000 x	480,00000 x	5959	N	381402	35207-03	
05	1	1,0000 x	96,50000 x	480,00000 x	5959	N	381402	35217-03	
05	1	1,0000 x	96,50000 x	480,00000 x	5959	N	381402	35219-01	
05	1	1,0000 x	96,50000 x	480,00000 x	5959	N	381402	35219-02	
05	1	1,0000 x	96,50000 x	480,00000 x	5959	N	381402	35219-03	
**	9				53631				
06	1	1,0000 x	120,50000 x	480,00000 x	7440	N	381402	35205-01	
06	1	1,0000 x	120,50000 x	480,00000 x	7440	N	381402	35205-02	
06	1	1,0000 x	120,50000 x	480,00000 x	7440	N	381402	35205-03	
06	1	1,0000 x	120,50000 x	480,00000 x	7440	N	381402	35217-01	
06	1	1,0000 x	120,50000 x	480,00000 x	7440	N	381402	35217-02	
06	1	1,0000 x	120,50000 x	480,00000 x	7440	N	381404	35302-01	
06	1	1,0000 x	120,50000 x	480,00000 x	7440	N	381404	35302-02	
06	1	1,0000 x	120,50000 x	480,00000 x	7440	N	381404	35302-03	
**	8				59520				
***	35				230453				

Z017202/Z03 We hereby certify that the above mentioned materials have been delivered in accordance with the terms of order.



AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

A01

Manufacturer's mark

B. BALDAUF
Test House Manager

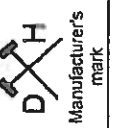
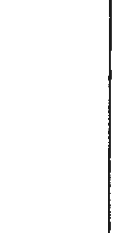
Inspector's stamp Date 07.02.13

PP 1

QM-System: Certification as per ISO 9001

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.de/certificate)

DILLINGER HÜTTE

A02	INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004 INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991 MATERIAL TEST REPORT (MTR)	A10 Advice of dispatch No./ Date of dispatch 445070-07.02.13	A08/ Manufacturer's order/ A03 Certificate No. 380705-001	B01 Product HEAVY PLATES	Sheet 3/...
A05	Established inspecting body DH	A06 Purchaser EDMONTON STEEL, EDMON	A07.1 No. ED10610-J1010-ER	A07.2 No. EDMONTON STEEL, EDMON	
B02	Steel design. SA516-70	Final receiver EDMONTON STEEL, EDMON		SA20-S5	
B03	Any suppl. requirements	ASME-III:2010+ADDENDA-2011A DIL-HUE-2:R33-2012-10-01			
	B04 Product delivery condition				
	ITEM NO.: 01-06 N: HT: 1670 GR.F +36 -27 GR.F SOAKING TIME TO ATTAIN THE TARGET TEMPERATURE OVER THE WHOLE SECTION: 1-1,75 MIN/MM (25-45 MIN/INCH) COOLING IN STILL AIR				
	B06 Marking of the product				
	ITEM NO.: 01-06 STEEL DESIGNATION SA516 70 MTLTV SA516 60 MTLTV HEAT NO. / TRADEMARK / ROLLED PLATE NO.-TEST NO. / INSPECTOR'S STAMP				
	B07-B99 Further information about the product				
	ITEM NO.: 01-06 THICKNESS REDUCTION RATIO >= 3,0 IS FULFILLED (CF. A/SA20 PAR. 5.3)				
	C10-C29 Tensile test				
B14 B07.2 Item Heat No. No.	B07.1 Rol. plate/ Test No.	Reference (heat) treatment	C01 C02/ C03 C01 Temp. GR.F	C10 C11 KSI RP02	C12 C13 A % LD=81%
01	381401 35303	K1 Q	RT	49,2	74,7 26
01	381401 35304	K1 Q	RT	49,4	74,5 28
01	381582 59860	K1 Q	RT	48,3	74,1 26
02	381402 35234	K1 Q	RT	49,6	74,8 29
03	381397 35309	K1 Q	RT	49,4	73,8 28
03	381397 35311	K1 Q	RT	49,3	73,7 29
03	381401 35306	K1 Q	RT	49,0	74,7 29
03	381402 35220	K1 Q	RT	49,2	73,8 31
04	381401 35306	K1 Q	RT	49,0	74,7 29
A04	201/202/203 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.				
				AG der Dillinger Hüttenwerke Postfach 1590, D-66748 Dillinger/Saar Inspection department	Date 07.02.13 Inspector's stamp B. BALDAUF Test House Manager PP 1

QM-System: Certification as per ISO 9001

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A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004 INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991 MATERIAL TEST REPORT (MTR)		A10 Advice of dispatch No./ Date of dispatch 445070-07.02.13		A08/ Manufacturer's order/ A03 Certificate No. 380705-001		Sheet 4/...	
A05 Established inspecting body DH		A06 Purchaser EDMONTON STEEL, EDMON		A07.1 No. ED10610-J1010-ER		B01 Product HEAVY PLATES	
B02/ Steel design. SA516-70		Final receiver EDMONTON STEEL, EDMON		A07.2 No.			
B03 Any suppl. requirements		ASME-IIA:2010+ADDENDA-2011A DIL-HUE-2:R33-2012-10-01		SA20-S5			

C10-C29 Tensile test									
B14 B07.2 Item Heat No.	B07.1 Rol.plate/ Test No.	B05 Reference (heat) treatment	C01 C02/C03 C01 Temp. GR.F	C10 C11 KSI RP02	C12 R _m	C13 A % LO=8IN	C14-C15		
04	381402	35216	K1 Q	RT	48,1	74,0	28		
04	381582	54939	K1 Q	RT	48,0	73,5	29		
05	381402	35206	K1 Q	RT	48,4	73,2	29		
05	381402	35207	K1 Q	RT	48,4	73,4	30		
05	381402	35217	K1 Q	RT	48,3	72,9	30		
05	381402	35219	K1 Q	RT	47,9	73,4	30		
06	381402	35205	K1 Q	RT	48,0	72,9	30		
06	381402	35217	K1 Q	RT	48,3	72,9	30		
06	381404	35302	K1 Q	RT	48,4	73,8	30		

C30-C39 Hardness test									
B14 B07.2 Item Heat No.	B07.1 Rol.plate/ Test No.	B05 Reference (heat) treatment	C01 C02/C03 C01 Temp. GR.F	C30 Method of test	C35 Individual values	C32 Mean value			
01	381401	35303	K1 O	RT HBW 10/3000	HB 145	146			
01	381401	35304	K1 O	RT HBW 10/3000	HB 149	146			
01	381582	59860	K1 O	RT HBW 10/3000	HB 140	136			
02	381402	35234	K1 O	RT HBW 10/3000	HB 148	143			
03	381397	35309	K1 O	RT HBW 10/3000	HB 140	138			
03	381397	35311	K1 O	RT HBW 10/3000	HB 137	133			
03	381401	35306	K1 O	RT HBW 10/3000	HB 145	144			
03	381402	35220	K1 O	RT HBW 10/3000	HB 143	142			
04	381401	35306	K1 O	RT HBW 10/3000	HB 145	144			
04	381402	35216	K1 O	RT HBW 10/3000	HB 145	147			
04	381582	54939	K1 O	RT HBW 10/3000	HB 136	137			

A04		Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.				AG der Dillinger Hüttenwerke Postfach 1560, D-66748 Dillinger/Saar Inspection department		Inspector's stamp Date 07.02.13		PP 1	
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QM-System: Certification as per ISO 9001

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.de/certificate)



A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004		A10 Advice of dispatch No./ Date of dispatch		A08/ Manufacturer's order/ A03 Certificate No.		Sheet	
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		445070-07.02.13		380705-001		5/...	
MATERIAL TEST REPORT (MTR)							
A05 Established inspecting body		A06 Purchaser		EDMONTON STEEL, EDMON		A07.1 No. ED10610-J1010-ER	
DH		Final receiver		EDMONTON STEEL, EDMON		A07.2 No.	
B02/ Steel design.		SA516-70		SA20-S5			
B03 Any suppl. requirements		ASME-11A:2010+ADDENDA-2011A					
		DIL-HUE-2:R33-2012-10-01					

C30-C39 Hardness test

B14 Item No.	B07.2 Heat No.	B07.1 Rot.plate/ Test No.	B05 Reference (heat) treatment	C01	C02/C01	C03 Temp. GR.F	C30 Method of test	C35 Individual values	C31 Individual values	C32 Mean value
05	381402	35206		K1	0	RT	HBW 10/3000	HB 141	140	140
05	381402	35207		K1	0	RT	HBW 10/3000	HB 140	140	140
05	381402	35217		K1	0	RT	HBW 10/3000	HB 146	143	145
05	381402	35219		K1	0	RT	HBW 10/3000	HB 141	142	142
06	381402	35205		K1	0	RT	HBW 10/3000	HB 146	148	148
06	381402	35217		K1	0	RT	HBW 10/3000	HB 146	143	145
06	381404	35302		K1	0	RT	HBW 10/3000	HB 146	146	146

C40-C49 Impact test

B14 Item No.	B07.2 Heat No.	B07.1 Rot.plate/ Test No.	B05 Reference (heat) treatment	C01	C02/C01	C03 Temp. GR.F	C41 Width of test piece	C40 Type of test piece	C44 Testing method	C45 Energy	C42 Individual values AV=FT.LBF	C43 Mean value
01	381401	35303		K1	LV	-51		CHP-V		AV 116	202	110
01	381401	35304		K1	LV	-51		CHP-V		AV 199	187	131
01	381582	59860		K1	LV	-51		CHP-V		AV 128	167	110
02	381402	35234		K1	LV	-51		CHP-V		AV 212	122	207
03	381397	35309		K1	LV	-51		CHP-V		AV 114	71	103
03	381397	35311		K1	LV	-51		CHP-V		AV 121	115	108
03	381401	35306		K1	LV	-51		CHP-V		AV 122	220	136
03	381402	35220		K1	LV	-51		CHP-V		AV 126	111	205
04	381401	35306		K1	LV	-51		CHP-V		AV 122	220	136
04	381402	35216		K1	LV	-51		CHP-V		AV 128	131	113
04	381582	54939		K1	LV	-51		CHP-V		AV 116	145	67
05	381402	35206		K1	LV	-51		CHP-V		AV 117	131	104
05	381402	35207		K1	LV	-51		CHP-V		AV 111	117	215

2017/02/203 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.



Manufacturer's mark

B. Baldauf



AG der Dillinger Hüttenwerke
Postfach 1580, D-56748 Dillingen/Saar
Inspection department

B. BALDAUF
Test House Manager

Inspector's stamp Date 07.02.13

PP 1

QM-System: Certification as per ISO 9001

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillingers.de/certificate)

DILLINGER HÜTTE

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004		A10 Advice of dispatch No./ Date of dispatch	A08/ Manufacturer's order/ A03 Certificate No.	Sheet
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		445070-07.02.13	380705-001	6/
MATERIAL TEST REPORT (MTR)				
A05 Established inspecting body DH	A06 Purchaser EDMONTON STEEL, EDMON	A07.1 No. ED10610-J1010-ER		
	Final receiver EDMONTON STEEL, EDMON	A07.2 No.		
B02/ Steel design. SA516-70				
B03 Any suppl. requirements	ASME-III-A:2010+ADDENDA-2011A			
	DIL-HUE-2:R33-2012-10-01			
	SA20-S5			
	HEAVY PLATES			

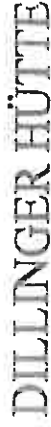
C40-C49 Impact test

B14 Item No.	B07.2 Heat No.	B07.1 Rot.plate/ Test No.	B05 Reference (heat) treatment	C01	C02/ C01	C03 Temp. GR.F	C41 Width of test piece	C40 Type of test piece	C44 Testing method	C46 Energy	C45 C42 Individual values AV=FT.LBF	C43 Mean value
05	381402	35217		K1	LV	-51		CHP-V			AV 120	211
05	381402	35219		K1	LV	-51		CHP-V			AV 118	144
06	381402	35205		K1	LV	-51		CHP-V			AV 218	234
06	381402	35217		K1	LV	-51		CHP-V			AV 120	211
06	381404	35302		K1	LV	-51		CHP-V			AV 127	125

C70-C99 Chemical composition % - Heat analysis

B07.2 Heat	C70	C	SI	MN	P	S	N	CU	MO	NI	CR	V	MB	SN	TI
381397	Y	0,171	0,373	1,17	0,010	0,0009	0,0061	0,028	0,013	0,044	0,032	0,002	0,000	0,001	0,003
381401	Y	0,174	0,374	1,18	0,010	0,0011	0,0062	0,017	0,006	0,029	0,030	0,000	0,000	0,000	0,003
381402	Y	0,169	0,379	1,18	0,009	0,0007	0,0060	0,019	0,007	0,026	0,030	0,000	0,000	0,001	0,003
381404	Y	0,172	0,377	1,19	0,008	0,0007	0,0063	0,020	0,013	0,035	0,030	0,001	0,000	0,000	0,003
381582	Y	0,167	0,369	1,19	0,007	0,0011	0,0054	0,036	0,020	0,036	0,042	0,000	0,000	0,002	0,003
B07.2 Heat	C70	B	CA	AL-T											
381397	Y	0,0003	0,0011	0,033											
381401	Y	0,0003	0,0022	0,038											
381402	Y	0,0002	0,0016	0,035											
381404	Y	0,0003	0,0012	0,036											
381582	Y	0,0003	0,0017	0,036											

A04	Z01Z02Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.	AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department	A01
 B. BALDAUF Test House Manager		 Inspector's stamp Date 07.02.13	PP 1



Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dilling.de/certificate)

A02	INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004		A10	Advice of dispatch No./ Date of dispatch	A08/ Manufacturer's order/ A03 Certificate No.	Sheet
	INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991			445070-07.02.13	380705-001	7/...
	MATERIAL TEST REPORT (MTR)				B01 Product	
A05	Established inspecting body DH	A06 Purchaser Final receiver	EDMONTON STEEL, EDMON EDMONTON STEEL, EDMON	A07.1 No. A07.2 No.	ED10610-J1010-ER	
B02/	Steel design.	SA516-70				
B03	Any suppl. requirements	ASME-11A:2010+ADDENDA-2011A DIL-HUE-2:R33-2012-10-01 SA20-S5				
HEAVY PLATES						

C94 Heat analysis Carbon equivalent / Alloying restrictions

B07.2		Heat								
381397	FO-02=	0,38	FO-51=	0,002	FO-55=	0,12	FO-78=	0,05	FO-91=	6,8
381401	FO-02=	0,38	FO-51=	0,000	FO-55=	0,08	FO-78=	0,04	FO-91=	6,8
381402	FO-02=	0,38	FO-51=	0,000	FO-55=	0,08	FO-78=	0,04	FO-91=	7,0
381404	FO-02=	0,38	FO-51=	0,001	FO-55=	0,10	FO-78=	0,04	FO-91=	6,9
381582	FO-02=	0,38	FO-51=	0,000	FO-55=	0,13	FO-78=	0,06	FO-91=	7,1

Cos 1 adla treatment

C95 Ladle treatment

ITEM NO.: 01-06

HEAT OF THE INDICATED ITEM: VACUUM DEGASSED / SULPHIDE SHAPE CONTROL

C95 Further information about ladle treatment

ITEM NO.: 01-06

CALCIUM TREATED

C70-C99 Chemical composition % - Product analysis

B07.2		B07.1		C01											
Heat	Test No.	C	SI	MN	P	S	N	CU	MO	HI	CR	V	NB	SN	TI
381397	35309	K1	0,165	0,366	1,15	0,010	0,0066	0,027	0,012	0,044	0,032	0,002	0,000	0,000	0,003
381401	35303	K1	0,172	0,358	1,15	0,008	0,0060	0,015	0,006	0,028	0,029	0,000	0,000	0,000	0,003
381401	35306	K1	0,172	0,366	1,16	0,008	0,0009	0,016	0,006	0,029	0,029	0,000	0,000	0,000	0,003
381402	35205	K1	0,178	0,378	1,18	0,008	0,0054	0,019	0,006	0,025	0,029	0,001	0,000	0,000	0,004
381402	35220	K1	0,173	0,380	1,18	0,009	0,0008	0,0055	0,019	0,024	0,030	0,001	0,000	0,000	0,004
381402	35234	X1	0,174	0,372	1,17	0,008	0,0055	0,017	0,006	0,027	0,029	0,000	0,000	0,000	0,003
381404	35302	K1	0,171	0,373	1,17	0,008	0,0054	0,019	0,011	0,032	0,029	0,001	0,000	0,000	0,003
381582	54939	K1	0,167	0,363	1,18	0,007	0,0047	0,035	0,019	0,036	0,042	0,000	0,000	0,001	0,003
381582	59860	K1	0,164	0,363	1,18	0,007	0,0009	0,0050	0,019	0,036	0,042	0,000	0,000	0,001	0,004

A04



Manufacturer's
mark

Z01Z02Z03 We hereby certify, that the above mentioned materials have been delivered in accordance

with the terms of order.

AG der Millimeter-Hilfswerke

AG der Dillinger Hüttenwerke
Postfach 1530, D-66748 Dillingen/Saar

Inspection department

THE

2392

B. BALDAUF

Test House Manager

Inspector's stamp

Date 07.02.13

22

QM-System: Certification as per ISO 9001

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.de/certificate)



A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204-2004		A10 Advice of dispatch No./ Date of dispatch		A08/ Manufacturer's order/ A03 Certificate No.		Sheet	
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		445070-07.02.13		380705-001		8/	
MATERIAL TEST REPORT (MTR)				B01 Product			
A05 Established inspecting body		A06 Purchaser		A07.1 No.		A07.2 No.	
DH		EDMONTON STEEL, EDMON		EDMONTON STEEL, EDMON		HEAVY PLATES	
B02 Steel design.		SA516-70		SA20-S5			
B03 Any suppl.		ASME-III A:2010+ADDENDA-2011A					
requirements		DIL-HUE-2:R33-2012-10-01					

C70-C99 Chemical composition % - Product analysis

B07.2	B07.1	C01	B	CA	AL-T
Heat	Test No.				
381397	35309	K1	0,0003	0,0012	0,029
381401	35303	K1	0,0000	0,0021	0,038
381401	35306	K1	0,0002	0,0023	0,036
381402	35205	K1	0,0003	0,0013	0,034
381402	35220	K1	0,0003	0,0013	0,034
381402	35234	K1	0,0000	0,0017	0,035
381404	35302	K1	0,0003	0,0013	0,034
381582	54939	K1	0,0001	0,0015	0,035
381582	59860	K1	0,0002	0,0014	0,035

C94 Product analysis Carbon equivalent / Alloying restrictions

B07.2	B07.1	C01	FO-02=	FO-51=	FO-55=
Heat	Test No.				
381397	35309	K1	0,37	0,002	0,12
381401	35303	K1	0,37	0,000	0,08
381401	35306	K1	0,38	0,000	0,08
381402	35205	K1	0,38	0,001	0,08
381402	35220	K1	0,38	0,001	0,08
381402	35234	K1	0,38	0,000	0,08
381404	35302	K1	0,38	0,001	0,09
381582	54939	K1	0,38	0,000	0,13
381582	59860	K1	0,38	0,000	0,13

Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.

A04		AG der Dillinger Hüttenwerke Postfach 1580, D-66749 Dillingen/Saar Inspection department		A01	
Manufacturer's mark		Inspector's stamp		Date: 07.02.13	
		B. BALDAUF Test House Manager		pp. 1	



Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.de/certificate)

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004 INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		A10 Advice of dispatch No./ Date of dispatch 445070-07.02.13	A08/Manufacturer's order/ A03 Certificate No. 380705-001	Sheet 9
MATERIAL TEST REPORT (MTR)				
A05 Established/Inspecting body DH	A06 Purchaser EDMONTON STEEL, EDMON A07.1 No. ED10610-J1010-ER Final receiver EDMONTON STEEL, EDMON A07.2 No.			
B02/ Steel design. SA516-70	SA20-S5			
B03 Any suppl. requirements ASME- IIA:2010+ADDENDA-2011A DIL-HUE-2:R33-2012-10-01				

C94 Carbon equivalent formula / Alloying restrictions

- FO-02 = $C + (Mn/6) + (Cr+Mo+V)/5 + (Ni+Cu)/15$
- FO-51 = V + Nb
- FO-55 = Cu+Mo+Ni+Cr
- FO-78 = Cr+Mo
- FO-91 = Mn/C

D01 Marking and identification, surface appearance, shape and dimensional properties

ITEM NO.: 01-06

EXAMINATION OF MARKING, SURFACE, SHAPE AND DIMENSIONS: THE RESULTS MEET THE REQUIREMENTS.

SURFACE AS PER ASME-SA20

THICKNESS AS PER ASME-SA20

LENGTH AND WIDTH AS PER ASME-SA20

FLATNESS AS PER 1/2-ASME-SA20



A04	201/202/203 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.	AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillinger/Saar Inspection department	A01
 B. BALDAUF Test House Manager		 A. H. B. Inspector's stamp	Date 07.02.13 PP 1





edmonton exchanger
& manufacturing ltd.

CERTIFICATE OF COMPLIANCE

5545-89 Street Edmonton, Alberta Canada T6E 5W9 www.edmontonexchanger.com tel 780.468.6722 • QC fax 780.466.4668 • sales fax 780.466.5155

Customer RJV GASFIELD LTD.

PO 3088

Work Order C102744 Date 2014/02/26 CofC# 47527 Page 1 of 2

Item#	Description	Qty	Heat#	Brinell Hardn.	Weld Proc.	Form. Proc.
S102744-1-1	SHELL(S) - 1.0000" NOM X 24" OD X 120" (Material Spec: SA 516-70 Normalized) Conforms to NACE MR0175 / ISO 15156-2 2009 Annex A Conforms to NACE MR0103 2007	1	365945-04620 <i>PE-13304</i>	MTR	WP600	4
S102744-1-2	SHELL(S) - 1.0000" NOM X 24" OD X 120" (Material Spec: SA 516-70 Normalized) Conforms to NACE MR0175 / ISO 15156-2 2009 Annex A Conforms to NACE MR0103 2007	1	362477-12841 <i>PE-13305</i>	MTR	WP600	4
S102744-1-3	SHELL(S) - 1.0000" NOM X 24" OD X 120" (Material Spec: SA 516-70 Normalized) Conforms to NACE MR0175 / ISO 15156-2 2009 Annex A Conforms to NACE MR0103 2007	1	362477-12841 <i>PE-13306</i>	MTR	WP600	4
S102744-1-4	SHELL(S) - 1.0000" NOM X 24" OD X 120" (Material Spec: SA 516-70 Normalized) Conforms to NACE MR0175 / ISO 15156-2 2009 Annex A Conforms to NACE MR0103 2007	1	362477-12835 <i>PE-13307</i>	MTR	WP600	4

Forming Procedure:

4. Cold Formed

Brinell Equipment: Newage Calibrated Pin
Brinell Hardness Tester

Supplementary Requirements

Item S102744-1-1 had cosmetic surface repairs done in accordance with ASME Sec.VIII, Div.1 and ASME Sec.IX. Repairs were done per approved Weld Procedure WP-2 (as welded) or WP-63 (PWHT). All repaired areas were MT examined.

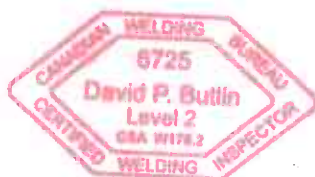
Normalized Material Identification Marking:

'MT' indicates normalized by the mill per ASME Code Section II, Part A, SA 20, Paragraph 13.1.1.

'GMT' indicates normalized by Edmonton Exchanger per ASME Code Section II, Part A, SA 20, Paragraph 13.1.2.

'GT' indicates normalized by Edmonton Exchanger per ASME Code Section VIII Division 1, UG-85 or ASME Code Section I, PG-77.4.

The item(s) listed above comply with the requirements of ASME Code Section I, PG-80 and ASME Code Section VIII, Division 1, UCS-79(d), UG-79 & UG-80. All welders and procedures are qualified to ASME Code Section IX. For tacking carbon steel items, roundbar used is 1018 Cold Rolled. Material being supplied conforms to the latest ASME Code Section II, Part A, 2013 Edition.



CONFORMANCE VERIFIED
TO ASME VIII-DIV I
CODE: ED 2013 A
DATE: Mar 3/14
BY: mo



edmonton exchanger
& manufacturing ltd.

CERTIFICATE OF COMPLIANCE

5545-89 Street Edmonton, Alberta Canada T6E 5W9 www.edmontonexchanger.com tel 780.468.6722 • QC fax 780.466.4668 • sales fax 780.466.5155

Customer RJV GASFIELD LTD.

PO 3088

Work Order C102744 Date 2014/02/26 CofC# 47527 Page 2 of 2

Supplementary Examination - Items

Edmonton Exchanger

MPI - Dry MPI

(for -1-1)

Acceptable to ASME Code

X SEC. VIII, DIV.1	_ SEC. IV
_ SEC. VIII, DIV.2	_ B31.1
_ SEC. I	_ B31.3
_ Bevelled Edge	_ Backgouge

_ Completed Welds

X Surface Repair Area

EE Procedure: MPI-001 REV.13

Material: SA 516-70 N

Thickness: 1"

Parker B300 Yoke

Magnaflux 8A-Red (Dry)

AC Continuous

Light: Natural

Tech: Tracy Enman (#11226)

CGSB / SNT: Level II

Date: 2014/02/25

Time: Day Shift



edmonton exchanger
& manufacturing ltd.

CERTIFICATE OF COMPLIANCE

MTR List

5545-89 Street Edmonton, Alberta Canada T6E 5W9 www.edmontonexchanger.com tel 780.468.6722 • QC fax 780.466.4668 • sales fax 780.466.5155

Customer RJV GASFIELD LTD. PO 3088 Work Order C102744 Date 2014/02/26 ColC# 47527 Page 1 of 1

MTR ID	Pages	Heat#	Thickness	Material Grades
16426	5	362477-12835	1"	SA 516-70 N
		362477-12841	1"	SA 516-70 N
16686	14	365945-84628	1"	SA 516-70 N

Heat#	Material Grades	MTR ID
362477-12835	SA 516-70 N	16426
362477-12841	SA 516-70 N	16426
365945-84628	SA 516-70 N	16686

Heat#	Thickness	Grade	HIC Report Filename
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QM-System: Certification as per ISO 9001

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dilling.de/certificate)

DILLINGER HÜTTE

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004		A10 Advice of dispatch No./ Date of dispatch	A08/ Manufacturer's order/ A03 Certificate No.	Sheet
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		396447-11.08.11	366720-001	1/...
MATERIAL TEST REPORT (MTR)				
A05 Established inspecting body DH	A06 Purchaser EDMONTON STEEL, EDMON	A07.1 No. ED10571-J1010-ER REV01	B01 Product HOT ROLLED PLATES	
SA20-S5				
B02/ Steel design. SA516-70				
B03 Any suppl. requirements	DIL-HUE-2:R31-2010-11-22			

B01-B99 Description of the product

B14 Item No.	B08 Number of places	B09 Thickness	B10 Width INCH	B11 Length	B12 Theoretical mass KG	B04 Product delivery condition	B07.2 Heat No.	B07.1 Rolled plate Test No.	A09 Purchaser article number
05	1	0,8750 x	150,00000 x	451,00000	7615 N		362163	84583-01	
05	1	0,8750 x	150,00000 x	451,00000	7615 N		362163	84583-02	
**	2				15230				
09	1	1,0000 x	120,50000 x	480,00000	7440 N		362477	12835-01	
09	1	1,0000 x	120,50000 x	480,00000	7440 N		362477	12835-02	
09	1	1,0000 x	120,50000 x	480,00000	7440 N		362477	12836-01	
09	1	1,0000 x	120,50000 x	480,00000	7440 N		362477	12836-02	
09	1	1,0000 x	120,50000 x	480,00000	7440 N		362477	12841-01	
09	1	1,0000 x	120,50000 x	480,00000	7440 N		362477	12841-02	
09	1	1,0000 x	120,50000 x	480,00000	7440 N		362477	12858-01	
09	1	1,0000 x	120,50000 x	480,00000	7440 N		362477	12858-02	
09	1	1,0000 x	120,50000 x	480,00000	7440 N		362477	12861-01	
09	1	1,0000 x	120,50000 x	480,00000	7440 N		362477	12861-02	
**	10				74400				
***	12				89630				

B04 Product delivery condition

ITEM NO.: 05,09

N: HT: 1670 GR.F +36 -27 GR.F

SOAKING TIME TO ATTAIN THE TARGET TEMPERATURE OVER THE WHOLE SECTION: 1-1.75 MIN/MM (25-45 MIN/INCH)

COOLING IN STILL AIR

CONFORMANCE VERIFIED

TO ASME VIII-DIV 1

CODE: ED 3013A

DATE: 11.08.11

BY: [Signature]

A04	201702/2003: We hereby certify, that the above-mentioned materials have been delivered in accordance with the terms of order.	AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar		A01
	[Signature]	AD5	Inspection department	
	B. BALDAUF Test House Manager	Inspector's stamp	Date 11.08.11	BM 1

QM-System: Certification as per ISO 9001

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.de/certificate)



A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004		A10 Advice of dispatch No./ Date of dispatch		A08/Manufacturer's order/ A03 Certificate No.		Sheet	
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		396447-11.08.11		366720-001		2/...	
MATERIAL TEST REPORT (MTR)				B01 Product		HOT ROLLED PLATES	
A05 Established inspecting body		A06 Purchaser		EDMONTON STEEL, EDMON		A07.1 No. ED10571-J1010-ER REV01	
DH		Final receiver		EDMONTON STEEL, EDMON		A07.2 No.	
B02 Steel design.		SA516-70		SA20-S5			
B03 Any suppl. requirements		ASME-II-A:10					
		DIL-HUE-2-R31-2010-11-22					

B06 Marking of the product

ITEM NO.: 05,09

STEEL DESIGNATION SA516 70 MTLTV SA516 60 MTLTV

HEAT NO. / TRADEMARK / ROLLED PLATE NO.-TEST NO. / INSPECTOR'S STAMP

B07-B99 Further information about the product

ITEM NO.: 05,09

THICKNESS REDUCTION RATIO >= 3,0 IS FULFILLED (CF. A/SA20 PAR. 5.3)

C10-C29 Tensile test

B14 Item No.	B07.2 Heat No.	B05 Ref. plate/ Test No.	Reference (heat) treatment	C01 C02/ C03 C01	C10 Temp. GR.F	C11 KSI RP02	C12 RM	C13 A % L0=8IN	C14-C15
05	362163	84583		K1 Q	RT	48,1	75,3	26	
09	362477	12835		K1 Q	RT	46,0	72,8	29	
09	362477	12836		K1 Q	RT	46,0	73,1	32	
09	362477	12841		K1 Q	RT	47,9	73,4	29	
09	362477	12858		K1 Q	RT	46,1	73,1	29	
09	362477	12861		K1 Q	RT	47,4	73,4	28	

C30-C39 Hardness test

B14 Item No.	B07.2 Heat No.	B05 Ref. plate/ Test No.	Reference (heat) treatment	C01 C02/ C03 C01	C03 Temp. GR.F	C30 Method of test	C35 Individual values	C32 Mean value
05	362163	84583		K1 O	RT	HBW 10/3000	HB 146	146
09	362477	12835		K1 O	RT	HBW 10/3000	HB 142	144
09	362477	12836		K1 O	RT	HBW 10/3000	HB 144	143
09	362477	12841		K1 O	RT	HBW 10/3000	HB 144	144
09	362477	12858		K1 O	RT	HBW 10/3000	HB 144	144

A04 Z01/Z02/Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.



Manufacturer's mark

B. Baldauf



B. BALDAUF
Test House Manager

AG der Dillinger Hüttenwerke
Postfach 1580, D-66748 Dillingen/Saar
Inspection department

Inspector's stamp Date 11.08.11 BM 1

QM-System: Certification as per ISO 9001

Erläuterungen, siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.de/certificate)

DILLINGER HÜTTE

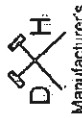
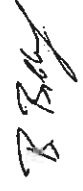
A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004 INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991 MATERIAL TEST REPORT (MTR)		A10 Advice of dispatch No./ Date of dispatch 396447-11.08.11		A08/ Manufacturer's order/ A03 Certificate No. 366720-001		Sheet 3/...	
A05 Established inspecting body DH		A06 Purchaser EDMONTON STEEL, EDMON		A07.1 No. ED10571-J1010-ER REV01		A07.2 No. SA20-S5	
B02/ Steel design. SA516-70		Final receiver EDMONTON STEEL, EDMON		HOT ROLLED PLATES			
B03 Any suppl. requirements DIL-HUE-2:R31-2010-11-22							

C30-C39 Hardness test									
B14 Item No.	B07.2 Heat No.	B05 Reference (heat) treatment	C01	C02/C01	C03 Temp. GR.F	C30 Method of test	C35 Individual values	C32 Mean value	
09	362477	12861	K1	O	RT	HBW 10/3000	HB 145 145 146	145	

C40-C49 Impact test										
B14 Item No.	B07.2 Heat No.	B05 Reference (heat) treatment	C01	C02/C01	C03 Temp. GR.F	C41 Width of test piece	C40 Type of test piece	C44 Testing method	C45 Individual values AV=FT.LBF	C43 Mean value
05	362477	12841	K1	LV	-51		CHP-V		139	129
09	362477	12835	K1	LV	-51		CHP-V		95	96
09	362477	12836	K1	LV	-51		CHP-V		37	75
09	362477	12858	K1	LV	-51		CHP-V		100	113
09	362477	12861	K1	LV	-51		CHP-V		99	71
09	362477	12861	K1	LV	-51		CHP-V		93	93

C70-C99 Chemical composition % - Heat analysis															
B07.2 Heat No.	C70	C	Si	Mn	P	S	N	CU	MO	NI	CR	V	NB	SN	TI
362163	Y	0.177	0.379	1.18	0.009	0.0006	0.0073	0.019	0.008	0.026	0.030	0.001	0.000	0.001	0.002
362477	Y	0.176	0.361	1.16	0.009	0.0008	0.0066	0.018	0.004	0.022	0.029	0.001	0.000	0.001	0.002

B07.2 Heat No.									
B07.2 Heat No.	C70	B	CA	AL-T					
362163	Y	0.0001	0.0010	0.030					
362477	Y	0.0003	0.0012	0.044					

A04	Z01/202/203 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.					AG der Dillinger Hüttenwerke Postfach 1580, D-65748 Dillingen/Saar Inspection department	A01
Test House Manager B. BALDAUF			Inspector's stamp Date 11.08.11				BM 1

QM-System: Certification as per ISO 9001

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.de/certificate)



DILLINGER HÜTTE

A02 INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004		A10 Advice of dispatch/No./ Date of dispatch		A08/ Manufacturer's order/ A03 Certificate No.		Sheet
INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991		396447-11.08.11		365720-001		4/...
MATERIAL TEST REPORT (MTR)				:901 Product		
A05 Established inspecting body DH		A06 Purchaser EDMONTON STEEL, EDMON		A07.1 No. ED10571-J1010-ER REV01		
		Final receiver EDMONTON STEEL, EDMON		A07.2 No.		HOT ROLLED PLATES
B02/ Steel design. SAS16-70				SA20-S5		
B03 Any suppl. requirements		ASME-II-A:10				
DIL-HUE-2:R31-2010-11-22						

C94 Heat analysis Carbon equivalent / Alloying restrictions															
B07.2 Heat	FO-02=	0,38	FO-51=	0,001	FO-55=	0,08	FO-78=	0,04	FO-91=	6,7					
362163	FO-02=	0,38	FO-51=	0,001	FO-55=	0,07	FO-78=	0,03	FO-91=	6,6					
362477															
C95 Ladle treatment															
ITEM NO.: 05,09															
HEAT OF THE INDICATED ITEM: VACUUM DEGASSED / SULPHIDE SHAPE CONTROL															
C95 Further information about ladle treatment															
ITEM NO.: 05,09															
CALCIUM TREATED															
C70-C99 Chemical composition % - Product analysis															
C01															
B07.2 Heat	Test No.	C	SI	MN	P	S	N	CU	MO	NI	CR	V	NB	SN	TI
362163	84583	X1	0,175	0,374	1,16	0,008	0,0004	0,0074	0,019	0,009	0,029	0,000	0,000	0,001	0,002
362477	12858	X1	0,173	0,361	1,15	0,008	0,0010	0,0069	0,018	0,003	0,028	0,002	0,000	0,000	0,002
C01															
B07.2 Heat	Test No.	B	CA	AL-T											
362163	84583	X1	0,0001	0,0009	0,030										
362477	12858	X1	0,0000	0,0011	0,043										
C94 Product analysis Carbon equivalent / Alloying restrictions															
C01															
B07.2 Heat	Test No.	X1	FO-02=	0,38	FO-51=	0,000	FO-55=	0,08							
362163	84583	X1	FO-02=	0,37	FO-51=	0,002	FO-55=	0,07							
362477	12858	X1	FO-02=	0,37	FO-51=	0,002	FO-55=	0,07							

A04	Z01Z02Z03 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order.				AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department	Date 11.08.11 Inspector's stamp Test House Manager B. BALDAUF	BM 1
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QM-System: Certification as per ISO 9001

Erläuterungen siehe Rückseite/Explications voir au verso/See reverse for explanations (www.dillinger.de/certificate)



A02	INSPECTION CERTIFICATE 3.1 AS PER EN 10204:2004 INSPECTION CERTIFICATE 3.1.B AS PER EN 10204:1991+A1:1995 + AS PER ISO 10474:1991 MATERIAL TEST REPORT (MTR)	A10 Advice of dispatch No./ Date of dispatch 396447-11.08.11	A08/ Manufacturer's order/ A03 Certificate No. 366720-001	Sheet 5
A05	Established Inspecting body DH	A06 Purchaser Final receiver EDMONTON STEEL, EDMON EDMONTON STEEL, EDMON	A07.1 No. A07.2 No. ED10571-J1010-ER REV01	B01 Product HOT ROLLED PLATES
B02/	Steel design. SA516-70	A06 Purchaser Final receiver EDMONTON STEEL, EDMON EDMONTON STEEL, EDMON	A07.1 No. A07.2 No. ED10571-J1010-ER REV01	B01 Product HOT ROLLED PLATES
B03	Any suppl. requirements DIL-HUE-2:R31-2010-11-22	A06 Purchaser Final receiver EDMONTON STEEL, EDMON EDMONTON STEEL, EDMON	A07.1 No. A07.2 No. ED10571-J1010-ER REV01	B01 Product HOT ROLLED PLATES



A04	2012/02/203 We hereby certify, that the above mentioned materials have been delivered in accordance with the terms of order. 	AG der Dillinger Hüttenwerke Postfach 1580, D-66748 Dillingen/Saar Inspection department Inspector's stamp Date 11.08.11 BM 1	A01
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NUCOR**NUCOR STEEL SEATTLE, INC.**

RUSSEL - EDMONTON
SOLD P O BOX 4128
TO: EDMONTON AB T6E 4T2
CANADA

SHIP
TO: EDMONTON AB T6E 4T2
CANADA

CERTIFIED MILL TEST REPORT

Ship from:

Nucor Steel Seattle, Inc.

2424 SW Andover

SEATTLE, WA 98106-1100

206-933-2222

Date: 7-Aug-2013

B.L. Number: 454925

Load Number: 285689

Material Safety Data Sheets are available at www.nucorbar.com or by contacting your inside sales representative.

NBMG-08 January 1, 2012

LOT # HEAT #		DESCRIPTION	PHYSICAL TESTS					CHEMICAL TESTS												
YIELD P.S.I.	TENSILE P.S.I.		ELONG % IN 8"	BEND	WT%	DEF	C	Ni	Mn	Cr	P	Mo	S	V	Si	Cb	Cu	Sn	C.E.	
4x4 DUNNAGE REQUIRED. RECEIVING HRS MONDAY THRU FRIDA																				
PO# -> M61043583																				
SE1310235601		Nucor Steel - Seattle Inc	51,924	74,896	24.2%		***		.15	.94			.011		.043		.16		.43	.37
SE13102356		5/8" (.6250) Round	358MPa	516MPa					.13	.10			.020		.006		.006			
		20' A36/44W	51,288	74,032	25.0%															
		CSA G40 21-04 44W/ASTM A36/A36M-08	354MPa	510MPa																
ASTM A709/A709M-11 GR 36 [250]																				
ASTM A36/A36M-08, A709/709M-11 G																				
R36, ASME SA36-10 Ed '11 Ad.																				
PO# -> M61043583																				
SE1310354302		Nucor Steel - Seattle Inc	53,041	74,635	28.1%		***		.17	.86			.011		.034		.18		.28	.36
SE13103543		1/2" (.5000) Round	366MPa	515MPa					.08	.10			.020		.003		.001			
		20' A36/44W	53,418	74,765	27.3%															
		CSA G40 21-04 44W/ASTM A36/A36M-08	368MPa	515MPa																
ASTM A709/A709M-11 GR 36 [250]																				
ASTM A36/A36M-08, A709/709M-11 G																				
R36, ASME SA36-10 Ed '11 Ad.																				
NDA																				
ASTM A36/A36M-08, A709/709M-11 G																				
R36, ASME SA36-10 Ed '11 Ad.																				

1/2" RD BAR

2013 EDITION
JAN 7, 2014

DATE: Sept 19, 2013

TO: [Signature]

RECEIVED

DATE: [Signature]



1/2" Rd Bar

2013 EDITION
JAN 7, 2014

CONFORMS TO
ASTM A36/A36M-08
DATE: 2013-08-07
DATE: Sept 19, 2013

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed above and that it satisfies those requirements.
1. Weld repair was not performed on this material.
2. Melting and Manufactured in the United States.
3. Mercury, Radium, or Alpha source materials in any form have not been used in the production of this material.

QUALITY ASSURANCE: Erik Nissen

ArcelorMittal Dofasco Inc.
P.O. Box 2460
Hamilton, Ontario
L8N 3J5

TEST REPORT
RAPPORT D'ESSAI

Attention: Dayna Katchma,
Email: dkatchma@russelmetals.com
Date: 05/27/2013

Page 1 of 1

Purchase Order/Bon de Commande
M51038199-05 MAY
Bill of Lading/Connaissance
636705
Sold To/Vendu A
RUSSEL METALS INC.
P.O. BOX 19
WINNIPEG, MB.
R3C 2G3

Customer/Client
243000
Sales Order/Bon de Commande
PCS 306204060
Packing Slip/Bordereau de Charge

Vendor/Vendeur
Vehicle or Carrier/Vehicule ou Transporteur
TBA/TBA/C

Ship To/Expédier A
RUSSEL METALS INC.
1359 ST. JAMES ST.
WINNIPEG, MB.
R3H 0K9

051061188

Spec/Norm et Spec.
DOFASCO G40.21 44W/50W FOR CONV TO PLATE
STANDARD THICKNESS TOLERANCE
TEST REPORTS REQUIRED
CODE QID 4427-32

Material Description/Description du Material
PLATE-IN-COIL FOR CONVERSION
STRUCTURAL STEEL
COILS
MILL EDGE

PLAIN DRY

.2360 MIN .2480 X 60 X COIL
Weight - 55210 LBS
Test Method
ASTM A370, B1019, E415

MECHANICAL PROPERTIES

HEAT	SERIAL NUMBER	TEST UNITS KSI	GAUGE LENGTH 2 INCH
COULER	NOMBRE DE SERIE	LIFT NUMBER	YIELD STRENGTH
		NOMBRE DE	RESISTANCE A LA
		PARDEAU	D'ELASTICITE
		5444339	66
			74
			31.6

1/4" 44 W PLATE



REVISED TO 2013 EDITION

JAN 7, 2014

CONFORMANCE VERIFIED
TO ASME VIII-DIV I
CODE: ED 2010 A 2011
DATE: Dec 17/13
BY: MB

HEAT	C	Mn	P	S	Si	Cu	Ni	Cr	Sn	Mo	Ala	Alt	Cb	V	Ti	Ca	N	B	O
115941	.07	.65	.01	.003	.03	.12	.06	.08	.014	.020	.023	.025	.047	.003	.012	.004	.0061	.0002	

ArcelorMittal Dofasco Inc. as per Diane Skupny-MacBride - CMTL Supervisor
The Results Relate Only To The Items Tested

This Report Shall Not Be Reproduced Except In Full Without The Expressed Written Approval of The CMTL Supervisor.

This Contract Is Subject To The Terms And Conditions Of Sale Shown On The Order Acknowledgement.
Ce Contrat est Sujet aux Termes et Conditions de Vente Indiqués Sur l'Accuse de Reception de Commande.



INSPECTION CERTIFICATE
CERTIFICATO DI COLLAUDO
(UNI EN 10204 3.1 / ISO 10474 3.1 B)

Number / Numero: **01/12/12566**
Page / Pagina: **1 / 7**

Date / Data: **August 11, 2012**

Customer / Cliente: **VAN LEUVE, ED MONTON**

Customer's Order Item / Rifer. Ordine Cliente: **45001523**

Manufacturer's Works Order N° / Conferma-Posizione: **1220215001**

Manufacture Process / Processo di fabbricazione:

Product Type / Tipo di prodotto:
See note nr.1
Vedi nota nr.1

Steel Grade / Grado dell'Acciaio:

See note nr.3
Vedi nota nr.3

Quantity / Quantità: **21Pcs/Pz**

79910.8 lb
790.78 ft
241.03 mt
36247 kg

Ends / Estremità:

See note nr.5
Vedi nota nr.5

Nominal Weight / Peso nominale:

94.82 lb/ft
141.11 Kg/m

Standard or Specification / Norme o specifica:
See note nr.2

Dimensions / Dimensioni:

24,000" O.D. x 3.57" W.T.
ø 610mm O.D. x 9.33mm W.T.

Schedule / Scheda:

20

Length / Lunghezza:

10000 mm + 11800 mm

DELIVERY NOTES / AVVISI DI SPEDIZIONE

Delivery Notes
Avvisi di spedizione

Job number: **0031052287 / 000070**
Shipping note: **82259466 - 19/08/2012**
Address: **2875-64TH AVENUE**

Town: **TSP 1R EDMONTON**
Country: **Canada**

Delivery Notes
Avvisi di spedizione

TENSILE TEST / PROVA DI TRAZIONE

Heat N° Cottura N°	Sample N° Prova N°	Specimen condition Condizioni della provetta			Specimen dimensions Dimensioni della provetta			Tensile Temp.		Y.S.		U.T.S.		Req. Max.		Elongation / Allungamento	
		LS	Sc	Type Tipo	Size mm	Area mm²	Temp. °C	Y.S. MPa	U.T.S. MPa	Y.S. ksi	U.T.S. ksi	Y.S. ksi	U.T.S. ksi	Req. Max. ksi	Cal.	Min.	Max.
33302	M2824	B	AM	SS	38.10 x 10.10	384.80	+20	513.00	684.00	73.8	98.1	73.8	98.1	50.0	2"	50.0	28.0%
329239	M2826	B	AM	SS	38.10 x 10.10	381.00	+20	558.00	718.00	80.7	100.0	80.7	100.0	50.0	2"	50.0	28.0%

CONFORMANCE VERIFIED
TO ASME VIII - DIV I
CODE: ED 2010 A 2011
DATE: DEC 4, 2013
BY: *[Signature]*

AM: As manufactured / Come laminato
B: Body / Corpo
L: Longitudinal / Longitudinale
Lo: Initial length / Lunghezza iniziale

LS: Location of sample / Ubicazione provetta
Max: Maximum / Massimo
Min: Minimum / Minimo
Obt: Obtained / Ottenuto

Req. Max: Required maximum / Massimo richiesto
Req: Required / Richiesto
Sc: Specimen condition / Condizioni Provetta

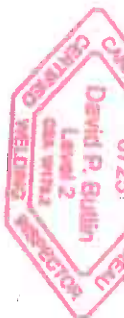
Se: Strip specimen / Rettangolare
U.T.S: Ultimate Tensile Strength / Rottura
Y.S: Yield Strength / Snervamento

This certificate is issued by a competent system and is valid with electronic signature. On the original certificate the trade-mark green colored "Tenaris" is stamped. In case the owner of this certificate would release a copy of it, he must attest its conformity to the original one having full responsibility for any unlawful or not allowed use. Any alteration and/or falsification will be subjected to the law.

Questo certificato è emesso da un sistema convalidato ed è valido con firma elettronica. "Tenaris" in colore verde è stampato sul certificato originale. Qualora l'utente rilasciasse una copia di questo certificato, deve attestare la conformità all'originale, assumendosi ogni responsabilità per eventuali falsificazioni o usi non consentiti. Qualsiasi alterazione o falsificazione sarà punita dalla legge.

FOR03171

24" STD SA-106B



VL QA Approved



INSPECTION CERTIFICATE
CERTIFICATO DI COLLAUDO
(UNI EN 10204 3.1 / ISO 10474 3.1.B)

Number / Numero: 01/12/12566
Page / Pagina: 2 / 7
Date / Data: August 11, 2012

Customer's Order Number / Numero dell'Ordine Cliente: 45901523
Manufacturer's Works Order Number / Conferma-Posizione: 1220215/001

Customer / Cliente: VAN LEUVEN-EDMONTON
Manufacturer Process / Processo di fabbricazione:
Product Type / Tipo di prodotto:
See note nr.1
Vedi nota nr.1

Standard or Specification / Norme o specifiche:
See note nr.2
Vedi nota nr.2

Dimensions / Dimensioni:
e 24.000" O.D. x 3.75" W.T.
e 610mm O.D. x 9.53mm W.T.
Schedule / Schede:
20
Length / Lunghezza:
10800 mm + 11800 mm
Quantity / Quantità: 21Pcs/Pz
79910.8 lb
36247 kg

Steel Grade / Grado dell'acciaio:
See note nr.3
Vedi nota nr.3
Ends / Estremità:
See note nr.5
Vedi nota nr.5
Nominal Weight / Peso nominale:
94.82 lb/ft
141.11 Kg/m

CHEMICAL COMPOSITION / COMPOSIZIONE CHIMICA

Composition % / Composizione %													
X 100							X 1000						
	C	Mn	Si	Ni	Cr	Mo	Cu	Fe	CC	P	S	Ti	Nb
Max	25	135	50	40	15	40	100	40	30	35	110	110	60
Min	25	135	10	0	0	0	0	100	40	30	35	110	60
Heat N°	Sample N°	P	Max	25	135	50	40	15	40	100	40	30	35
Colata N°	Prova N°	P	Min	25	135	10	0	0	0	0	0	0	0
923076	M2824	H	11	103	20	12	12	5	14	47	27.7	13	3
923078	M2824	P	10	98	18	11	11	5	15	45	25	10	2
929239	M2828	H	11	103	20	12	12	5	14	47	27.7	13	3
929239	M2828	P	11	103	20	12	12	5	14	47	27.7	13	3



CCC: C + Fe (Mn+Si+24+Cr+15+Ni+20+Cr+Mo+V)
H: Heat / Colata
F1: (V+Ni+Cr+Mo+Cu)
Max: Maximum / Massimo
Min: Minimum / Minimo
P: Product / Prodotto

THROUGH WALL HARDNESS / DUREZZA A TRAVERSO LO SPESSORE

Required values		Individuals / Individuali		Average / Media		Hardness type vickers		ID		Var.	
Heat N°	Sample N°	Specimen condition	Quad.	Scale	Var.	Top of durezza	MM	1	2	3	4
Colata N°	Prova N°	Sc	1	1	2	1	1	1	1	1	1
923078	M2824	AM	1	HV10	132.0	131.0	131.0	131.0	131.0	131.0	131.0
929239	M2828	AM	1	HV10	142.0	142.0	142.0	142.0	142.0	142.0	142.0

This certificate is issued by computerized system and it is valid with electronic signature. On this original certificate the trademark green colored Tenaris is stamped. In case the owner of the original certificate would release a copy of it, he must attest its conformity to the original one being upon himself the responsibility for any use, not intended use. Any alteration and/or falsification will be subjected to the law.
Questo certificato è emesso da un sistema computerizzato ed è valido con firma elettronica. Il marchio Tenaris in colore verde stampato sul presente certificato originale. In caso l'utente del presente certificato rilasciasse una copia di esso, deve attestare la sua conformità al originale, assumendone ogni responsabilità per un eventuale uso non autorizzato. Qualunque alterazione o falsificazione sarà punita a norma di legge.

FOR03171



INSPECTION CERTIFICATE

CERTIFICATO DI COLLAUDO

(UNI EN 10204 3.1 / ISO 10474 3.1.B)

Number / Numero: 01/12/12566

Page / Pagina: 3 / 7

Date / Data: August 11, 2012

Manufacturer's Works Order N° / Conferma-Posizione:

Customer / Cliente: VAN LEUWEN-EDMONTON

Manufacture Process / Processo di fabbricazione:

Standard or Specification / Norme o specifica:

See note nr.2

Vedi nota nr.2

Dimensions / Dimensioni:

Ø 24.000" O.D. ± .375" W.T.

Ø 610mm O.D. ± 9.53mm W.T.

Product Type / Tipo di prodotto:

See note nr.1

Vedi nota nr.1

Schedule / Scheda:

20

Length / Lunghezza:

10800 mm ± 11800 mm

Steel Grade / Grado dell'acciaio:

See note nr.3

Vedi nota nr.3

Quantity / Quantità: 21Pcs/Pz

79910.8 lb

741.03 mt

36247 Kg

Surface / Superficie:

See note nr.4

Vedi nota nr.4

Ends / Estremità:

See note nr.5

Vedi nota nr.5

Normal Weight / Peso nominale:

94.82 lb/ft

141.11 Kg/m

THROUGH WALL HARDNESS / DUREZZA ATTRAVERSO LO SPESSORE

AM: As manufactured / Come laminato

Avg. Average / Media

Dist. Distance from outer diameter / Distanza del

diametro esterno

ID: Internal Diameter / Diametro interno

Max: Maximum / Massimo

Min: Minimum / Minimo

MM: Middle Wall / Centro da espessura

OD: Outside Diameter / Diametro esterno

Quad: Quadrant / Quadrante

Sc: Specimen condition / Condizioni Provetta

Var: Variation / Variazione

FLATTENING TEST / PROVA DI SCHIACCIAMENTO

Standard / Norma:			
Heat N°	Sample N°	Zone	Sc
Colata N°	Prova N°	Zone	
923078	M2833	E1	AM
		pieces of the lot	
		Good / Buono	

Standard / Norma:			
Heat N°	Sample N°	Zone	Sc
Colata N°	Prova N°	Zone	
929239	M2835	E1	AM
		pieces of the lot	
		Good / Buono	

AM: As manufactured / Come laminato

E1 / E2: Ends of Sampling / Estremità delle

provette

Sc: Specimen condition / Condizioni Provetta

HYDROSTATIC TEST / PROVA IDRAULICA

Pressure / Pressione		Time / Tempo		Results / Risultato	
Unit / Unità	Value / Valore	Seconds / Secondi			
psi	1.181.1	5			Satisfactory / Soddisfacente



This certificate is issued by a computerized system and is valid with electronic signature. On the original certificate the trade-mark green colored Tenaris is stamped. In case the owner of the original certificate would release a copy of it, he must attest its conformity to the original one taking on himself the responsibility for any unlawful or not allowed use. Any alteration and/or falsification will be subjected to the law.

Questo certificato è emesso da un sistema computerizzato ed è valido con firma elettronica. Il certificato originale porta a stampa il marchio verde Tenaris. In caso l'utente del certificato originale rilasciasse una copia di esso, deve attestare la sua conformità all'originale assumendosi la responsabilità per un illecito e non consentito. Qualsiasi alterazione ed/o falsificazione sarà punita secondo la legge.

FOR03171



INSPECTION CERTIFICATE
CERTIFICATO DI COLLAUDO
(UNI EN 10204 3.1 / ISO 10474 3.1.B)

Number / Numero: 01/12/12566
Page / Pagina: 4 / 7
Date / Data: August 11, 2012

Customer / Cliente: VAN LEIJWEN-ED., ONTARIO

Customer's Order Item / Rifer. Ordine Cliente: 45001523
Customer's Reference / Posizione Cliente: 12202151001

Manufacturer Process / Processo di fabbricazione:

Product Type / Tipo di prodotto:

See note nr.1

Standard or Specification / Norme o specifica:

See note nr.2

Steel Grade / Grado dell'Acciaio:

See note nr.3

Quantity / Quantità: 21 pcs/lpz

Quantity / Quantità: 79910.8 lb

36247 kg

Surface / Superficie:

See note nr.4

See note nr.5

Weight / Peso nominale

141.11 Kg/m

Dimensions / Dimensioni:
ø 24.00" O.D. x 375" W.T.
ø 610mm O.D. x 9.53mm W.T.

Schedule / Schedule:

20

Length / Lunghezza:

10800 mm + 11800 mm

SUPPLEMENTARY INFORMATION / INFORMAZIONI SUPPLEMENTARI

STANDARD EDITIONS
EDIZIONI NORME

Standard: CSA Z245.1 Year: 2007
Standard: ASTM A 106 Year: 2010
Standard: ASME SA 106 Year: 2010
Standard: NACE MR0175/ISO 15156 Year: 2003
Standard: NACE MR0103 Year: 2007

Norma: CSA Z245.1 Anno: 2007
Norma: ASTM A 106 Anno: 2010
Norma: ASME SA 106 Anno: 2010
Norma: NACE MR0175/ISO 15156 Anno: 2003
Norma: NACE MR0103 Anno: 2007

PRODUCT DESCRIPTION NOTES
NOTE DI DESCRIZIONE DEL PRODOTTO

Note 1 is the full description of the Product type
SEAMLESS HOT FINISHED PIPES FOR HIGH TEMPERATURE USES (WITH EXTRA REQUIREMENTS)
Note 2 is the full description of the Standard or specification
ACCORDING TO ASTM A 106, ASME SA 106, CSA Z245.1, PSP 00373/1 + TEMPLATE LP CANADA REV.6
Note 3 is the full description of the Steel grade
STEEL GR. B ASTM A 106 / SA 106/290 CSA Z245.1 CAT.1 SS NDE
Note 4 is the full description of the Surface
INTERIALLY BARE, EXTERNALLY VARNISHED, WITH QUAKERCOAT 854 CLEAR
Note 5 is the full description of the Ends
BEVEL API SL 44 ED / ISO 3183-07 CT4.8825

Supplementary Information
Informazioni supplementari

AFTER INSPECTION OPERATION, THE MATERIAL HAS NO A RESIDUAL MAGNETISM
GREATER THAN 20 GAUSS
HARDNESS HRC 22 MAX, ACCORDING TO NACE MR-01-75/ISO 15156
DUREZZA HRC 22 MAX, IN ACCORDO ALLA SPEC. NACE MR-01-75/ISO 15156

This certificate is issued by a computerized system and it is valid with electronic signature. On the original certificate the trade mark given colored
T mark is stamped. In case the owner of the original certificate would release a copy of it, he must stamp it conforming to the original one taking
upon himself the responsibility for any liability or not allowed use. Any alteration and/or falsification will be subjected to the law.





INSPECTION CERTIFICATE
CERTIFICATO DI COLLAUDO
(UNI EN 10204 3.1 / ISO 10474 3.1.B)

Number / Numero: 01/12/2566
Page / Pagina: 5 / 7
Date / Data: August 11, 2012

Customer / Cliente: VAN LEUWEN-EDMONTON

Manufacture Process / Processo di fabbricazione:

Product Type / Tipo di prodotto: 45001523

Standard or Specification / Norme o specifica:

See note nr.2

Dimensions / Dimensioni:

ø 24.000" O.D. x 3.75" W.T.
ø 610mm O.D. x 9.53mm W.T.

Schedule / Scheda:

20

Length / Lunghezza:

10800 mm ± 11800 mm

Steel Grade / Grado dell'Acciaio:

See note nr.3

Quantity / Quantità: 21 Pcs/Pz
79910.8 lb
36247 kg

Surface / Superficie:

See note nr.4

Ends / Estremità:

See note nr.5
Nominal Weight / Peso nominale:
94.82 lb/ft
141.14 Kg/m

SUPPLEMENTARY INFORMATION / INFORMAZIONI SUPPLEMENTARIE

Supplementary Information
Informazioni supplementari

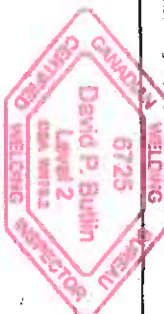
HARDNESS HBW 225 MAX. ACCORDING TO NACE MR-01-03
ALL PIPES HAVE BEEN TESTED BY ELECTROMAGNETIC TEST FOR LONGITUDINAL
OUTSIDE DEFECTS (NOTCH 10%), WITH SATISFACTORY RESULT
ALL PIPES HAVE BEEN TESTED FOR LAMINATION DETECTION BY U.T.
WITH SATISFACTORY RESULT
THE ENDS (FOR 150 mm) HAVE BEEN TESTED BY DRY MAGNETIC
PARTICLES INT./EXT. WITH SATISFACTORY RESULT
BEVELS HAVE BEEN TESTED BY DRY MAGNETIC PARTICLES,
WITH SATISFACTORY RESULT
ALL PIPES HAVE BEEN TESTED BY ULTRASONIC INSPECTION FOR
TRANSVERSAL/LONGITUDINAL INSIDE/OUTSIDE
DEFECTS (NOTCH 10.0 %), WITH SATISFACTORY RESULT
THE UNSPECTED ENDS HAVE BEEN EXAMINED BY MANUAL U.T. FOR DEFECTS,
WALL THICKNESS, LAMINATION, LONGITUDINAL/TRANSVERSAL INSIDE/OUTSIDE,
WITH SATISFACTORY RESULT
SEAMLESS HOT FINISHED PIPES
VISUAL AND DIMENSIONAL CONTROL HAS BEEN CARRIED OUT WITH SATISFACTORY RESULT
STEEL IS FULLY KILLED AND PRODUCED BY ELECTRIC FURNACE TO A FINE GRAIN PRACTICE
THE PRODUCT SUPPLIED IS IN COMPLIANCE WITH THE REQUIREMENTS OF THE ORDER.
MANUFACTURED BY TENARIS DALMINE
NO WELD REPAIR, MERCURY AND RADIATION FREE
Tenaris IT identification number for MTC: 55+HUG+

DUREZZA HBW 225 MAX. IN ACCORDO ALLA SPEC. NACE MR-01-03
I TUBI SONO STATI SOTTOPOSTI AL CONTROLLO ELETTROMAGNETICO PER LA
RICERCA DI DIFETTI LONGITUDINALI ESTERNI (TARATURA 10%).
CON ESITO SODDISFACENTE
I TUBI SONO STATI CONTROLLATI PER LA RICERCA DI DOPPI SPessori CON
ULTRASUONI, CON ESITO POSITIVO
LE ESTREMITA' DEI TUBI SONO STATE CONTROLLATE (PER 150 mm) CON
PARTICELLE MAGNETICHE SECCHE, CON ESITO SODDISFACENTE
TUTTI I TUBI SONO STATI CONTROLLATI CON U.S. PER LA RICERCA DI DIFETTI
TRANSVERSALI/LONGITUDINALI INTERNI/ESTERNI
(TARATURA 10.0 %), CON ESITO SODDISFACENTE
LE ESTREMITA' NON CONTROLLATE IN AUTOMATICO SONO STATE CONTROLLATE
CON U.S. MANUAL PER RICERCA DIFETTI LONG./TRASV. INTERNI/ESTERNI
CONTROLLO SPessori, DOPPI SPessori, CON ESITO SODDISFACENTE
TUBI SENZA SALDATURA FINITI A CALDO
IL CONTROLLO VISIVO E DIMENSIONALE HA DATO ESITO SODDISFACENTE
L'ACCIAIO E' DI TIPO CALMATO, A GRANO FINE, PRODOTTO AL FORNO ELETTRICO
IL MATERIALE FORNITO E' IN ACCORDO AI REQUISITI DELL'ORDINE
FABBRICATO DA TENARIS DALMINE
NON RIPARATO MEDIANTE SALDATURA, ESENTE DA MERCURIO E RADIAZIONI
Numero identificativo Tenaris IT per MTC: 55+HUG+

This certificate is issued by a computerized system and it is valid with electronic signature. On the original certificate the trade mark is printed and the certificate is stamped. In case the owner of the original certificate would release a copy of it, he must meet its conformity to the original one taking upon himself the responsibility for any error or not allowed use. Any alteration and/or indication will be subjected to the law.

Questo certificato è emesso da un sistema computerizzato ed è valido con firma elettronica. Il marchio è stampato e il certificato è timbrato. In caso l'utente del certificato originale rilasciasse una copia di esso, deve assumerne la responsabilità per qualsiasi errore o uso non consentito. Qualsiasi alterazione e/o indicazione sarà perseguita a norma di legge.

FOR03171





INSPECTION CERTIFICATE
CERTIFICATO DI COLLAUDO
(UNI EN 10204 3.1 / ISO 10474 3.1.B)

Number / Numero: **01/12/12566** Page / Pagina: **6 / 7**
Date / Data: August 11, 2012

Customer / Cliente: **VAN LEUWEN-EDMONTON**

Customer's Order Item / Rifer. Ordine Cliente: **45001523**

Manufacturer's Reference / Posizione Cliente: **1220215/001**

Manufacturer's Works Order N° / Conferma-Posizione: **1220215/001**

Manufacture Process / Processo di fabbricazione

Product Type / Tipo di prodotto:
See note nr.1
Vedi nota nr.1

Standard or Specification / Norma o specifica:

See note nr.2
Vedi nota nr.2

Steel Grade / Grado dell'Acciaio:

See note nr.3
Vedi nota nr.3

Surface / Superficie:
See note nr.4
Vedi nota nr.4

Ends / Estremità:
See note nr.5
Vedi nota nr.5

Dimensions / Dimensioni:
Ø 2,000" O.D. x 375" W.T.
Ø 610mm O.D. x 9.53mm W.T.

Schedule / Spessore:
20
10800 mm x 11800 mm

Quantity / Quantità: **21Pcs/Pz**
790,76 ft
241.03 mt

78910,8 lb
36247 kg

Nominal Weight / Peso nominale:
9,82 lb/ft
141,11 Kg/m

MARKING / MARCATURA

Marking
Marcatura

STENCILING	VERIFICAZIONE
1220215/001 COLATA 407.3 X 16.2 ACC. 190 T ASTM ASME ASA 106 CSA Z245-1-07 BIZ90 CAT I SS S 24 X 0.375 OD 1181/INDE DATEAT: COLATA FT FT LBS LBS NR NR MADE IN ITALY	1220215/001 COLATA 407.3 X 16.2 ACC. 190 T ASTM ASME ASA 106 CSA Z245-1-07 BIZ90 CAT I SS S 24 X 0.375 OD 1181/INDE DATEAT: COLATA FT FT LBS LBS NR NR MADE IN ITALY
LEGENDA COLATA = Heat Number T = TENARIS Logo FT = Pipe/Tube Length in feet LBS = Pipe/Tube Weight in pounds NR = Pipe/Tube Identifier	LEGENDA COLATA = Numero di colata T = Logo TENARIS FT = Lunghezza del tubo in piedi LBS = Peso del tubo in libbre NR = Identificativo numerico del tubo

This certificate is issued by a computerized system and it is valid with electronic signature. On the original certificate the trademark given contained
Teararis is stamped. In case the owner of this original certificate would release a copy of it, he must attest its conformity to the original one taking
upon him the responsibility for any unlawful or not allowed use. Any alteration and/or falsification will be subjected to the law.

Questo certificato è emesso da un sistema computerizzato ed è valido con firma elettronica. Il certificato originale contenente
il marchio Tenaris è stampato. In caso l'utente di questo certificato rilasciasse una copia, deve attestare la conformità all'originale assumendone
l'intera responsabilità per qualsiasi uso non autorizzato o falsificazione. Qualsiasi alterazione e/o falsificazione sarà punita a norma di legge.

FOR03171





INSPECTION CERTIFICATE
CERTIFICATO DI COLLAUDO
(UNI EN 10204 3.1 / ISO 10474 3.1.B)

Number / Numero: **01/12/12566** Page / Pagina: **7 / 7**
Date / Data: **August 11, 2012**

Welding Inspection Department
Tenaris Quality Department
Via S. Maria 10, 40138 Bologna, Italy
Tel. +39 051 260 1500 Fax +39 051 260 1501

Customer / Cliente: **VAN LEUWEN-EDMONTON**

Customer's Order Item / Refer. Ordine Cliente - Item Customer's Reference / Posizione Cliente: **45001523**

Manufacturer's Works Order N° / Conferma-Posizione: **1220215001**

Manufacture Process / Processo di fabbricazione:

Product Type / Tipo di prodotto:

Surface / Superficie:

Standard or Specification / Norme o specifiche:

Steel Grade / Grado dell'Acciaio:

Ends / Estremità:

See note nr.2

See note nr.3

See note nr.4

Dimensions / Dimensioni:
ø 24.000" O.D. ± .375" W.T.
ø 610mm O.D. ± 9.53mm W.T.

Schedule / Scheda:
20

Length / Lunghezza:
10800 mm ± 11800 mm

Quantity / Quantità: **21PCS/Pz**
790.78 ft
241.03 mt

79910.8 lb
36247 kg

Normal Weight / Peso nominale:
94.82 lb/ft
141.11 Kg/m

This is to certify that the product described here has been manufactured, sampled, tested, and inspected in accordance with purchaser order requirements. This certificate is not a declaration of origin nor may it be used as a declaration of origin.

Si certifica che il prodotto descritto è stato prodotto, provato, testato e controllato in conformità ai requisiti dell'ordine del cliente. Questo certificato non è una dichiarazione d'origine e non può essere usato come tale.

CUSTOMER - THIRD PARTY		TENARIS QUALITY DEPARTMENT SIGNATURE	
INSPECTION COMPANY COMPAGNIA DISPEZIONE			
		QUALITY CERTIFICATION DEPT. UFFICIO CERTIFICAZIONE QUALITA' BONATTI Paolo	
			
		CHIEF OF QUALITY CERTIFICATION DEPT. RESPONSABILE DELL'UFFICIO CERTIFICAZIONE QUALITA' RAVANELLI Pietro	

This certificate is issued by a computerized system and is valid with electronic signature. On the original certificate the trade-mark green colored Tenaris is stamped. In case the owner of the original certificate would release a copy of it, he must attest its conformity to the original one taking upon himself the responsibility for any unlawful or not allowed use. Any alteration and/or falsification will be subjected to the law.

Questo certificato è emesso da un sistema computerizzato ed è valido con firma elettronica. Il certificato originale è munito del marchio Tenaris in colore verde. In caso l'utente del certificato originale rilasciasse una copia, deve attestare la sua conformità al documento originale, assumendone ogni responsabilità per l'uso lecito o non consentito. Qualunque alterazione e falsificazione sarà punita a norma di legge.

FOR03171





HARDNESS CERTIFICATE CERTIFICATO DI DUREZZA

Number / Numero: 01/12/12566
Page / Pagina: 1 / 4
Date / Data: August 11, 2012

Customer / Cliente: VAN LE EUWEN-EDMONTON

Manufacture Process / Processo di lavorazione:

Standard or Specification / Norme o specifica:

See note nr.2

Dimensions / Dimensioni:
ø 24.00" O.D. x .375" W.T.
ø 610mm O.D. x 9.53mm W.T.

Schedule / Scheda:

Length / Lunghezza:
10800 mm ± 11800 mm

Steel Grade / Grado dell'acciaio:
See note nr.3

Quantity / Quantità: 21 Pcs/Pz
79910.8 lb
36247 kg

Surface / Superficie

See note nr.4

Ends / Estremità:

See note nr.5

Nominal Weight / Peso nominale:
141.11 Kg/m

Customer's Order Item / Rifer. Ordine Cliente - Item Customer's Reference / Posizione Cliente: 45001523

Manufacturer's Works Order N° / Conferma Posizione: 12202151001

DELIVERY NOTES / AVVISI DI SPEDIZIONE

Job number: 0031062297 / 000070
Shipping note: 82259466 - 10/08/2012
Address: 2875-64TH AVENUE

Delivery Notes
Avvisi di spedizione

Town: TSP 1R EDMONTON
Country: Canada

Delivery Notes
Avvisi di spedizione

THROUGH WALL HARDNESS / DUREZZA ATTRAVERSO LO SPESSORE

Required values		Individual / Individui		Average / Media		Hardness type vickers	
Heat N°	Sample N°	Specimen condition	Quad.	Scale	Var.	Min.	Max.
923078	M2824	Sc	1	HV10	132.0	131.0	131.0
923239	M2826	AM	1	HV10	144.0	143.0	142.0
AM: As manufactured / Come laminato		diametro esterno					
Avg: Average / Media		ID: Internal Diameter / Diametro interno					
Dist: Distance from outer diameter / Distanza dal		Max: Maximum / Massimo					

SUPPLEMENTARY INFORMATION / INFORMAZIONI SUPPLEMENTARIE

NOTE DI DESCRIZIONE DEL PRODOTTO
La nota 1 è la descrizione completa del "Prodotto tipo"

This certificate is issued by a computerized system and it is valid with electronic signature. On the original certificate the trade-mark green colored "Tenaris" is stamped. In case the owner of the original certificate would release a copy of it, he must attach its conformity to the original one having upon himself the responsibility for any unfair use. Any alteration and/or falsification will be subjected to the law.

FORNITORE



HARDNESS CERTIFICATE CERTIFICATO DI DUREZZA

Number / Numero: 01/2112566
Page / Pagina: 2 / 4
Date / Data: August 11, 2012

Customer / Cliente: VAN LEUWEN-EDMONTON
Customer's Order / Item / Rifer. Ordine Cliente: 45001523
Customer's Reference / Posizione Cliente: 1220215/001

Manufacturer's Works Order N° / Conferma Posizione: 1220215/001

Manufacture Process / Processo di fabbricazione:

Product Type / Tipo di prodotto:
Vedi nota nr.1

Standard or Specification / Norma o specifica:

See note nr.2
Vedi nota nr.2

Dimensions / Dimensioni:
Ø 24.000" O.D. x 375" W.T.
Ø 610mm O.D. x 9.53mm W.T.

Length / Lunghezza:
10800 mm + 1800 mm

Steel Grade / Grado dell'Acciaio:
See note nr.3
Vedi nota nr.3

Quantity / Quantità: 21 pcs/lb
79910.8 lb
36247 kg

Ends / Estremità:
See note nr.5
Vedi nota nr.5

Nominal Weight / Peso nominale:
94.82 lb/l
141.11 Kg/m

SUPPLEMENTARY INFORMATION / INFORMAZIONI SUPPLEMENTARI

PRODUCT DESCRIPTION NOTES NOTE DI DESCRIZIONE DEL PRODOTTO

SEAMLESS HOT FINISHED PIPES FOR HIGH TEMPERATURE USES (WITH EXTRA REQUIREMENTS)
Note 2 is the full description of the Standard or specification
ACCORDING TO ASTM A 106, ASME SA 106, CSA Z245.1, PSP 003731 + TEMPLATE LP CANADA REV.6
Note 3 is the full description of the Steel grade
STEEL GR. B ASTM A 106/SA 106/280 CSA Z245.1 CAT1 SS NOE
Note 4 is the full description of the Surface
INTERNALLY BARC, EXTERNALLY VARINISHED, WITH QUAKERCOAT 854 CLEAR
Note 5 is the full description of the Ends
REVEL API 5L 44 ED/ISO 3183-07 CT4.8825

Supplementary Information Informazioni supplementari

SEAMLESS HOT FINISHED PIPES
VISUAL AND DIMENSIONAL CONTROL HAS BEEN CARRIED OUT WITH SATISFACTORY RESULT
STEEL IS FULLY KILLED AND PRODUCED BY ELECTRIC FURNACE TO A FINE GRAIN PRACTICE
THE PRODUCT SUPPLIED IS IN COMPLIANCE WITH THE REQUIREMENTS OF THE ORDER.
MANUFACTURED BY TENARIS DALLMINE
NO WELD REPAIR, MERCURY AND RADIATION FREE
Tenaris IT identification number for MTC: 56+MVA

TUBI SENZA SALDATURA FINITI A CALDO
IL CONTROLLO VISIVO E DIMENSIONALE HA DATO ESITO SODDISFACENTE
L'ACCIAIO È DI TIPO CALMATO, A GRANO FINE, PRODOTTO AL FORNO ELETTRICO
IL MATERIALE FORNITO È IN ACCORDO AI REQUISITI DELL'ORDINE.
FABBRICATO DA TENARIS DALLMINE
NON RIPARATO MEDIANTE SALDATURA, ESENTE DA MERCURIO E RADIAZIONI
Numero identificativo Tenaris IT per MTC: 56+MVA

This certificate is issued by a computerized system and it is valid with electronic signature. On the original certificate, the trade mark green colored Tenaris is stamped. In case the owner of the original certificate would release a copy of it, he must add it, according to the original one doing upon himself the responsibility for any misuse or not allowed use. Any alteration or other falsification will be subjected to the law.

Questo certificato è emesso da un sistema computerizzato ed è valido con firma elettronica. Il marchio Tenaris in colore verde, stampato sull'originale. In caso l'utente rilasci una copia, deve dichiarare la sua responsabilità per qualsiasi uso non consentito. Qualunque alterazione o falsificazione sarà punita a norma di legge.

FOR03171





HARDNESS CERTIFICATE CERTIFICATO DI DUREZZA

Number / Numero: 0112/12566
Page / Pagina: 3 / 4
Date / Data: August 11, 2012

Customer / Cliente: VAN LEE UFFEN-EDMONTOR

Customer's Order Item / Rifer. Ordine Cliente - Item Customer's Reference / Posizione Cliente: 45001523

Manufacturer's Works Order N° / Conferma-Posizione: 1220215/001

Manufacture Process / Processo di fabbricazione:

Product Type / Tipo di prodotto:

Surface / Superficie:

Standard or Specification / Norme o specifiche:

See note nr.1

Steel Grade / Grado dell'Acciaio:

See note nr.4

See note nr.2

See note nr.3

See note nr.5

Dimensions / Dimensioni:

Schedule / Scheda:

Length / Lunghezza:

Quantity / Quantità:

Ends / Estremità:

ø 24.000" O.D. x .375" W.T.
ø 610mm O.D. x 9.53mm W.T.

20

10800 mm ± 11800 mm

790,78 ft
241,03 mt

79910,8 lb
36247 kg

See note nr.4

See note nr.5

10800 mm ± 11800 mm

20

10800 mm ± 11800 mm

790,78 ft
241,03 mt

79910,8 lb
36247 kg

See note nr.4

See note nr.5

MARKING / MARCATURA

Marking
Marcatura

STENCILING

VERNICIATURA

1220215/001 COLATA 407.3 X 16.2 ACC. 190 T ASTM ASME ASA 106 CSA Z245-1-07

1220215/001 COLATA 407.3 X 16.2 ACC. 190 T ASTM ASME ASA 106 CSA Z245-1-07

B/290 CAT I SS S 24 X 0.375 OD 1%94,71 PSI 1181 INDE DATHEAT COLATA FT FT LBS
LBS NR NR MADE IN ITALY

B/290 CAT I SS S 24 X 0.375 OD 1%94,71 PSI 1181 INDE DATHEAT COLATA FT FT LBS
LBS NR NR MADE IN ITALY

LEGEND

LEGENDA

COLATA = Heat Number

COLATA = Numero di colata

T = TENARIS Logo

T = logo TENARIS

FT = Pipe/Tube Length in feet

FT = Lunghezza del tubo in piedi

LBS = Pipe/Tube Weight in pounds

LBS = Peso del tubo in libbre

NR = Pipe/Tube Identifier

NR = Identificativo numerico del tubo



This certificate is issued by a computerized system and it is valid with electronic signature. On the original certificate the trade mark green colored "Tenaris" is stamped. In case the owner of the original certificate would release a copy of it, he must attest its conformity to the original one signing upon these the responsibility for any falsified or not allowed use. Any alteration or falsification will be subjected to the law.

Questo certificato è emesso da un sistema computerizzato ed è valido con firma elettronica. Il certificato originale riporta il marchio Tenaris verde stampato. In caso il proprietario del certificato originale rilasciasse una copia di esso, deve attestare la conformità con l'originale, assumendone ogni responsabilità per un falsificato o non convalidato. Qualunque alterazione o falsificazione sarà perseguita a norma di legge.

FOR0371



HARDNESS CERTIFICATE CERTIFICATO DI DUREZZA

Number / Numero: 01/12/12566
Page / Pagina: 4 / 4
Date / Data: August 11, 2012

Tenaris S.p.A. - Via S. Maria 1
I-20139 Milano (Italy)
Tel. +39 02 5749 1111
Fax +39 02 5749 1112
www.tenaris.com

Customer / Cliente: VAN LEUWEN-EDMONTON

Customer's Order Item / Rifer. Ordine Cliente: Item 45001523

Manufacturer's Works Order N° / Conferma-Posizione: 1220215001

Manufacture Process / Processo di fabbricazione:

Product Type / Tipo di prodotto

See note nr.1
Vedi nota nr.1

Steel Grade / Grado dell'acciaio:

See note nr.3
Vedi nota nr.3

Surface / Superficie:

See note nr.4
Vedi nota nr.4

Ends / Estremità:

See note nr.5
Vedi nota nr.5

Standard or Specification / Norme o specifiche:

See note nr.2
Vedi nota nr.2

Dimensions / Dimensioni:

Ø 24.000" O.D. x .375" W.T.
Ø 610mm O.D. x 9.53mm W.T.

Schedule / Spessore:

20

Length / Lunghezza:

10800 mm ± 11800 mm

Quantity / Quantità: 21Pcs/Pz

79910.8 lb
36247 kg

Nominal Weight / Peso nominale:

94.82 lb/lb
141.11 Kg/m

This is to certify that the product described here has been manufactured, assembled, tested, and inspected in accordance with purchaser order requirements. This certificate is not a declaration of origin nor may it be used as a declaration of origin.

Si certifica che il prodotto descritto è stato prodotto, provato, testato e controllato in conformità ai requisiti dell'ordine del cliente. Questo certificato non è una dichiarazione d'origine e non può essere usato come tale.

CUSTOMER / THIRD PARTY

TENARIS QUALITY DEPARTMENT SIGNATURE

INSPECTION COMPANY
CONFERMA DISPONIBILE

QUALITY CERTIFICATION DEPT
UFFICIO CERTIFICAZIONE QUALITÀ
BONALTA Paolo

CHIEF OF QUALITY CERTIFICATION DEPT
RESPONSABILE DELL'UFFICIO CERTIFICAZIONE QUALITÀ
RAVANELLI Pietro



This certificate is issued by a computerized system and it is valid with electronic signature. On the original certificate the hard-copy green colored "Tenaris" is stamped. In case the owner of the original certificate would release a copy of it, he must attest its conformity to the original one taking upon himself the responsibility for any unlawful or not a good use. Any alteration and/or falsification will be subjected to the law.

Questo certificato è emesso da un sistema computerizzato ed è valido con firma elettronica. Il certificato originale riporta il marchio "Tenaris" in carta verde stampata. In caso l'utente del certificato originale rilasciasse una copia, deve attestare la sua conformità all'originale, assumendone ogni responsabilità per un eventuale uso non corretto. Qualunque alterazione ed/o falsificazione sarà perseguita a norma di legge.

FOR03171

Benteler Steel/Tube GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: + 49.5254.81-0 Fax: + 49.5254.13666

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1
EN 10204:2005-01

Benteler Steel/Tube GmbH - Postfach 13 40 - 33043 Paderborn - Deutschland
Trans Am Piping Products Ltd.
1711 - 66th Avenue
EDMONTON AB T6P 1Y9
CANADA

BENTELER

Steel/Tube

Blatt: 1 / 5
Page: Page:

Prüf-Nr.:
Inspection No.:
No. du certificat:

65-726634/001/P

Dokument-Nr.:
Document No.:
No. du document:

Kunden-Bestell-Nr.:
Purchase Order No.:
No. de commande du client:

BST 12-5609 / Trans Am CI-12-522

Hersteller:
Manufacturer:
Producteur:

Wärmehwerk Dinslaken
IDW EN ISO 9001, ISO 9001:2008 CERTIFIED BY TÜV NORD CERT
PED 97/23/EC CERTIFIED BY TÜV NORD SYSTEMS

Benteler Auftrags-Nr.:
Benteler Order No.:
No. de commande Benteler:

1579940

Herstellerzeichen:
Manufacturer's brand:
Marque du producteur:

Wärmehwerk Dinslaken

Versandzeichen-Nr.:
Dispatch Note No.:
No. d'avis d'expédition:

6577380

Stempel des Abnahmebeauftragten:
Stamp of the inspection representative:
Poinçon du contrôleur:

WA

Produkt: NAHTLOSE STAHLROHRE
Product: SEAMLESS STEEL TUBES
Produit: TUBES D'ACIER SANS SOUDURE

Stahlschmelzungsverfahren:
Steelmaking process:
Procédé d'élaboration de l'acier:

ELEKTROSTAHL
ELECTRIC FURNACE
FOUR ELECTRIQUE

Lieferbedingungen:

ASME SA-106, ASME Section II Part A Edition 2010 Addenda 2011a, S6, ASTM-A 106-2011, S6, API

Terms of delivery:

Specification 5L Forty-Fourth Edition, October 2007, ISO 3183:2007, PSL 1, incl. ADDENDUM 3, CSA

Conditions de livraison:

Standard Z245.1-07 Category I, Sour Service, ANSI/NACE MR0175/ISO 15156-1:2009, ANSI/NACE

Maße - Toleranzen:

ASME B36.10M-2004, ASME SA-530, ASME Section II Part A Edition 2010 Addenda 2011a, ASTM-A 530-2004a

Dimensions-tolerances:

ASME B36.10M-2004, ASME SA-530, ASME Section II Part A Edition 2010 Addenda 2011a, ASTM-A 530-2004a

Dimensions-tolerances:

ASME B36.10M-2004, ASME SA-530, ASME Section II Part A Edition 2010 Addenda 2011a, ASTM-A 530-2004a

Stahlsort:

GRADE 290, GRADE B, GRADE X 42

Steel grade:

GRADE 290, GRADE B, GRADE X 42

Nuance d'acier:

GRADE 290, GRADE B, GRADE X 42

Lieferzustand:

Hot rolled

Delivery condition:

Hot rolled

État de livraison:

Hot rolled

Produktkennzeichnung:

FS: BENTELER Z.245.1-07 - ISO 3183 - A 106-S6 - SA-106-S6 Spec 5L-0151 API SIGN1112 PSL1

Product marking:

B/X42/290 SS HEAT-NO. TEST PRESSURE NDE DIMENSIONS TUBES-LENGTH FEET WA GERMANY P.O.

Marquage du produit:

CI-12-522

AEZ = Azimutenbeschriftung, Etching ink marking, gravure à l'encre, FK = Farbmarkierung, colour marking, marquage par couleur, FS = Febschüsselmarkierung, point stenciling, marquage par pointure, PS = Prägestempel, die stamp, marquage au poinçonnage, TS = Tiefstrichmarkierung, ink jet spray marking, imprimé à jet de couleur, LK = Laserkennzeichnung, Laser marking, Marquage laser, PNE = Blaudruckkennzeichnung, tag marking, marquage sur étiquette

Pos. Stück Maße
Item Number Dimensions
Posle Nombre Dimensions

Länge
Length
Longueur

Gewicht
Weight
Poids

Schmelzen-Nr.
Heat No.
No. de coulée

Prüfdruck
Test pressure
Pression d'épreuve

Rohr-Nr.-Gruppe
Tube number group
Série de no. des tubes

Vielfachlängen
Multiple lengths
Longueurs multiples

0003 99 2" NPS * Sched. 80
20 FT - 22 FT

2164,70

10977

572720

3000

5

5



575122

2" XXH SA-106-B

Benteler Steel/Tube GmbH
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Deutschland
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BENTELER

Steel/Tube

ABNAHMEPRÜFZEUGNIS EN 10204-3.1 Dokument-Nr.: 65-726634/001/P Blatt: 2 / 5
INSPECTION CERTIFICATE EN 10204-3.1 Document No.: 65-726634/001/P Page: 2 / 5
CERTIFICAT DE RECEPTION EN 10204-3.1 No. du certificat: 65-726634/001/P

0005	20	4" NPS * Sched. 160 20 FT - 22 FT	436,68	9938	575122	3000	5
0006	59	2" NPS * XXS 20 FT - 22 FT	1288,39	11720	575122	3000	5
0007	29	3" NPS * XXS 20 FT - 22 FT	624,61	11821	575122	3000	5

Schmelzenanalyse [%] / Heat analysis [%] / Analyse sur coulée [%]

Pos.	Schmelzen-Nr.	Item	Heat No.	C	SI	MN	P	S	CR	MO	NI	CU	V	NB	TI	B
0003	572720			0,140	0,240	0,75	0,009	0,001	0,08	0,03	0,05	0,08	0,003	0,014	0,002	0,0001
0005	575122			0,130	0,190	0,74	0,012	0,001	0,09	0,03	0,06	0,11	0,002	0,013	0,002	0,0001
0006	575122			0,130	0,190	0,74	0,012	0,001	0,09	0,03	0,06	0,11	0,002	0,013	0,002	0,0001
0007	575122			0,130	0,190	0,74	0,012	0,001	0,09	0,03	0,06	0,11	0,002	0,013	0,002	0,0001

1. Formel: $CE_{IIW} = C + (Mn/6) + ((Cr + Mo + V)/5) + ((Cu + Ni)/15) \leq 0,40 \%$

2. Formel: $CEV = C + F \cdot ((Mn/6) + (Si/24) + (Cu/15) + ((Cr + Mo + V + Nb)/5) + (5 \cdot B)) \leq 0,40$

3. Formel: $Mn/C \geq 3/1$

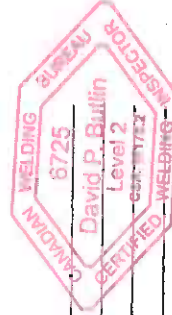
4. Formel: $Cr + Cu + Mo + Ni + V \leq 1,00 \%$

Formelergebnisse / Formula results / Résultats des formules

Pos.	Schmelzen-Nr.	Item	Heat No.	1. Formel	2. Formel	3. Formel	4. Formel
0003	572720			0,296	0,283	5,357	0,243
0005	575122			0,289	0,265	5,692	0,292
0006	575122			0,289	0,265	5,692	0,292
0007	575122			0,289	0,265	5,692	0,292

Produktanalyse [%] / Product analysis [%] / Analyse sur produit [%]

Pos.	Schmelzen-Nr.	Item	Heat No.	C	SI	MN	P	S	CR	MO	NI	CU	V	NB	TI	B
0003	572720			0,140	0,240	0,73	0,008	0,001	0,07	0,03	0,05	0,08	0,003	0,014	0,002	0,0001
0005	572720			0,140	0,240	0,74	0,009	0,001	0,08	0,03	0,05	0,08	0,003	0,014	0,002	0,0001



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BENTELER

Steel/Tube

ABNAHMEPRÜFZEUGNIS EN 10204-3.1 Dokument-Nr.: 65-726634/001/P Prüf-Nr.: Blatt: 3 / 5
INSPECTION CERTIFICATE EN 10204-3.1 Document No.: Inspection No.: Page: 5
CERTIFICAT DE RECEPTION EN 10204-3.1 No. du document: No. du certificat: Page: 5
Produktanalyse [%] / Product analysis [%] / Analyse sur produit [%]

Pos.	Schmelzen-Nr.	Item	Heat No.	C	Si	Mn	P	S	CR	MO	NI	CU	V	NB	TI	B
0005	575122			0,130	0,190	0,74	0,011	0,001	0,08	0,03	0,06	0,11	0,002	0,013	0,002	0,0001
0005	575122			0,140	0,190	0,75	0,010	0,001	0,08	0,03	0,06	0,11	0,002	0,013	0,002	0,0001
0006	575122			0,130	0,180	0,72	0,011	0,001	0,08	0,03	0,06	0,11	0,002	0,013	0,002	0,0001
0006	575122			0,130	0,190	0,74	0,010	0,001	0,08	0,03	0,05	0,11	0,002	0,013	0,002	0,0001
0007	575122			0,130	0,190	0,73	0,011	0,001	0,08	0,03	0,06	0,11	0,002	0,013	0,002	0,0001
0007	575122			0,140	0,190	0,74	0,010	0,001	0,08	0,03	0,06	0,11	0,002	0,013	0,002	0,0001

1. Formel: $CE_{IIW} = C + (Mn/6) + ((Cr + Mo + V)/5) + ((Cu + Ni)/15) < 0,40 \%$
2. Formel: $CEV = C + F + ((Mn/6) + (Si/24) + (Cu/15) + ((Cr + Mo + V + Nb)/5) + (5 \cdot B)) < 0,40$
3. Formel: $Mn/C > 3/1$
4. Formel: $Cr + Cu + Mo + Ni + V < 1,00 \%$

Formelergebnisse / Formula results / Résultats des formules

Pos.	Schmelzen-Nr.	1. Formel	2. Formel	3. Formel	4. Formel
Item	Heat No.	1. Formula	2. Formula	3. Formula	4. Formula
Poste	No. de coulée	1. Formule	2. Formule	3. Formule	4. Formule
0003	572720	0,290	0,279	5,214	0,233
0003	572720	0,294	0,282	5,285	0,243
0005	575122	0,287	0,264	5,692	0,282
0005	575122	0,298	0,283	5,357	0,282
0006	575122	0,283	0,261	5,538	0,282
0006	575122	0,286	0,263	5,692	0,272
0007	575122	0,285	0,262	5,615	0,282
0007	575122	0,297	0,282	5,285	0,282



Prüfergebnisse / Test results / Résultats des essais

Die Rohre sind auf Dichtheit geprüft durch: Hydrostatic test: acc. to CSA Z245.1, holding time min 5 seconds, Test
The tubes have been submitted to a leak tightness test by: pressure/Time-record
Les tubes ont passé un contrôle d'étanchéité par: PASSED

Benteler Steel/Tube GmbH

Postfach 13 40

33043 Paderborn

Deutschland

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BENTELER

Steel/Tube

ABNAHMEPRÜFZEUGNIS EN 10204-3.1

INSPECTION CERTIFICATE EN 10204-3.1

CERTIFICAT DE RECEPTION EN 10204-3.1

Die Rohre wurden zerstörungsfrei geprüft:

The tubes are non destructive tested:

Les tubes ont passé un essai non destructif:

Augensichtkontrolle:

Visual inspection:

Examen visuel:

PASSED

Biegeversuch:

Bending test:

Essai de cintrage:

Pos. / Item / Poste: 0003, 0006

PASSED

Maßkontrolle:

Dimensions examination:

Vérification des dimensions:

PASSED

Dokument-Nr.: 65-726634/001/P

Document No.:

No. du document:

Prüf-Nr.:

Inspection No.:

No. du certificat:

ET-test: acc. to CSA Z245.1; for imperfections: drilled hole: 3,20 mm

Blatt: 4 / 5

Page:

Page:

PASSED

Ergebnisse der mechanischen Prüfung / Results of mechanical testing / Résultats des essais mécaniques

Die Probenahme erfolgte an Vielfachlängen.

The sampling was carried out on multiple lengths.

L'échantillonnage était réalisé aux longueurs multiples.

Zugversuch längs Streifenprobe / Tensile test longitudinal Strip test specimen / Essai de traction longitudinale Bande decoupee sur tube

Pos.	Proben-Nr.	Schmelzen-Nr.	Probenabmessung	Streckgrenze	Zugfestigkeit	Dehnung	Einschnürung
Item	Specimen No.	Heat No.	Specimen dimensions	Yield strength	Tensile strength	Elongation	Area reduction
Poste	No. de l'éprouvette	No. de coulée	Dimensions de l'éprouv.	Limite élastique	Résistance à la traction	Allongement	Coefficient de striction
Anforderungen			mm	ReH	Rm	A2"	1. Formel
Requirements			mm	PSI	PSI	%	1. Formula
Exigences			mm	MIN 42061	50191-90649	MIN 30	1. Formule
0003	000001	572720	19,00 X 6,00	53084	70488	34	
0005	000001	575122	25,40 X 13,55	48443	65847	42	
0006	000001	575122	19,00 X 11,10	48878	66282	42	
0007	000001	575122	25,40 X 15,90	46992	65557	42	

Härteprüfung / Hardness test / Essai de dureté

Pos.	Proben-Nr.	Schmelzen-Nr.	Härte			
Item	Specimen No.	Heat No.	Hardness			
Poste	No. de l'éprouv.	No. de coulée	Dureté			
Anforderungen			HRC	HB	HV	HRB
Requirements						
Exigences						
0003	000001	572720				HBW
0005	000001	575122				
0006	000001	575122				
0007	000001	575122				



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Steel/Tube

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

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Prüf-Nr.:
Inspection No.:
No. du certificat:

65-726634/001/P

Dokument-Nr.:
Document No.:
No. du document:

Restmagnetismus / Demagnetize / Démagnétiser

demagnetized tubes; 1 measurement per 4 hours on both tube ends Two readings 180° apart around the circumference. Average value max 3.0 Millitesla (24 A/cm), individual value max 3.5 Millitesla (28 A/cm)

Vermerk / Remark / Remarque

Pos. / Item / Poste: 0003, 0006, 0006, 0006, 0006

NACE Standard: Hardness acc. to ANSI/NACE MR0175/ISO 15156: HRC max 22., The material meets the requirements of NACE MR0103. Region 3, in accordance to Figure 1 and Appendix A.2, ANSI/NACE MR0175/ISO 15156-2:2009; Certificate remarks: The Material is Aluminium deoxidized and inclusion shape controlled with Calcium-Silicon treatment, it is the end user's responsibility to ensure that all environmental requirements as well as the requirements regarding engineering, construction and operation of facilities are fulfilled in the country of use. Fit for purpose of the parts as well as homologation is not the scope of this contract., This is to confirm that the seamless linepipe supplied by Benteler and verified to CSA Standard Z245.1-07 meets the requirement for micro hardness of max. 248 HV 500 gf., No weld repair has been carried out; Bend test: mandrel diameter 12D; Bending angle: 90°

Pos. / Item / Poste: 0005, 0007, 0007

NACE Standard: Hardness acc. to ANSI/NACE MR0175/ISO 15156: HRC max 22., The material meets the requirements of NACE MR0103. Region 3, in accordance to Figure 1 and Appendix A.2, ANSI/NACE MR0175/ISO 15156-2:2009; Certificate remarks: The Material is Aluminium deoxidized and inclusion shape controlled with Calcium-Silicon treatment, it is the end user's responsibility to ensure that all environmental requirements as well as the requirements regarding engineering, construction and operation of facilities are fulfilled in the country of use. Fit for purpose of the parts as well as homologation is not the scope of this contract., This is to confirm that the seamless linepipe supplied by Benteler and verified to CSA Standard Z245.1-07 meets the requirement for micro hardness of max. 248 HV 500 gf., No weld repair has been carried out

Grain size: acc. to ASTM-E 112; Grain size and finer: 6

Verkäufer(in) / Salesman/ woman in charge : Mrs Schöneweis, Tel.: 05254/81-4234, Fax: 4289

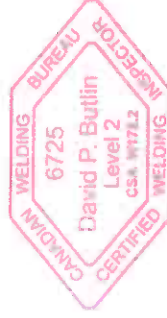


Dinslaken, 04.12.2012, TEL.: 02064.623-5370 FAX: 02064.623-5390

Abnahmebeauftragter
Inspection representative
Contrôleur

DR. BASEL KEITA / Theil

Es wird bestätigt, daß die gelieferten Erzeugnisse den techn. Lieferbedingungen des Auftrages entsprechen. Dieses Dokument wurde mittels EDV erstellt und ist ohne Unterschrift rechtsgültig.
We certify that the supplied products comply with the order specification. This document was prepared by means of electronic data processing and is valid without signature.
Nous attestons que les produits livrés sont conformes aux stipulations de la commande. Ce document a été établi par traitement électronique et est valide sans signature.





INSPECTION CERTIFICATE

(BS EN 10204 3.1: 2004 - ISO 10474 3.1B: 1991)

Number / Número: **659146**
Page / Página: **1 / 6**

Date / Día: May 08, 2012

Customer / Cliente: **VAN LEEUWEN PIPE & TUBE (CANADA) INC - VAN LEE** Customer's Order / Orden Cliente - Item: **PO 45001464-00010** Manufacturer's Works Order N° / Confirmación de Venta: **55190/07**

Manufacturing Process / Proceso de Manufactura: **SEAMLESS HOT ROLLED**

Product Type / Tipo de Producto: **CARBON STEEL PIPE-HIGH TEMPERATURE SERV.**

Surface / Superficie: **INT BARE / EXT VARNISHED**

Ends / Extremos: **BEVELLED AT 30 DEG. ASTM**

Standard or Specification / Normas o Especificaciones: **ASTM A583M / CSA Z245.1-07 CAT.1 SSPSP00373/1+NACE MR0175/10103+PRO LP-006**

Steel Grade / Grado de acero: **B/290 CAT I SS**

Dimensions / Dimensiones: **2.3/8 X 0.344 INCH**

Schedule / Cédula: **160**

Length / Longitud: **S.R. (SP)**

Quantity / Cantidad: **23303 LB**

Nominal Weight / Peso Nominal: **7.46 LB/FT**

Net Weight / Peso Neto: **11.11 KG/M**

TENSILE TEST / ENSAYO DE TENSION

Heat N° Coleada N°	Sample N° Muestra N°	Zone Zona	Pipe N° Tubo N°	Specimen condition Condición de la probeta	Test Temp. Temp. ensayo	Y.S.		U.T.S.		Y.S./U.T.S.		Elongation / Alargamiento	
						Req.	Min.	Req.	Min.	Req.	Min.	Obt.	Obt.
						415	290	625	290	0.93	2"	%	%
						371	371	525	371	0.71	50.8	24.0	31.5

AM: As manufactured / Según proceso de fabricación

M: Middle / Medio

Max: Maximum / Máximo

Min: Minimum / Mínimo

Obt: Obtained / Obtenido

Ort: Orientation / Orientación

Req. Max: Required maximum / Máximo requerido

Req: Required / Requerido

RT: Room temperature / Temperatura ambiente

Sc: Specimen condition / Condición de la probeta

Ss: Strip specimen / Muestra rectangular

U.T.S: Ultimate tensile strength / Resistencia

Y.S: Yield strength / Fluencia

CHEMICAL COMPOSITION / COMPOSICION QUIMICA

Composition % / Composición %													
X 100													
C	Mn	Si	Cr	Mo	Al sol	S	P	Ni	V	Cu	Al	Sn	As
25	135	50	40	15	—	10	30	400	80	400	—	—	—
H	Max	—	—	—	—	—	—	—	—	—	—	—	—
Min	—	29	10	—	—	—	—	—	—	—	—	—	—
P	Max	25	135	50	40	15	—	—	—	—	—	—	—
Min	—	29	10	—	—	—	—	—	—	—	—	—	—
H	Max	16	108	24	6	1	12	35	28	100	28	8	4
Min	—	—	—	—	—	—	—	—	—	—	—	—	—
Co	—	—	—	—	—	—	—	—	—	—	—	—	—
Nb	—	—	—	—	—	—	—	—	—	—	—	—	—
Ti	—	—	—	—	—	—	—	—	—	—	—	—	—
Pb	—	—	—	—	—	—	—	—	—	—	—	—	—
Sb	—	—	—	—	—	—	—	—	—	—	—	—	—
Co	—	—	—	—	—	—	—	—	—	—	—	—	—
Zr	—	—	—	—	—	—	—	—	—	—	—	—	—
Bi	—	—	—	—	—	—	—	—	—	—	—	—	—
Ce	—	—	—	—	—	—	—	—	—	—	—	—	—
B	—	—	—	—	—	—	—	—	—	—	—	—	—
N	—	—	—	—	—	—	—	—	—	—	—	—	—
Mg	—	—	—	—	—	—	—	—	—	—	—	—	—
W	—	—	—	—	—	—	—	—	—	—	—	—	—
Ce.1	—	—	—	—	—	—	—	—	—	—	—	—	—
Ce.2	—	—	—	—	—	—	—	—	—	—	—	—	—
F.1	—	—	—	—	—	—	—	—	—	—	—	—	—

This certificate is issued by a computerized system and it is valid with electronic signature. On the original certificate the trademark green colored "Tenaris" is stamped. In case the owner of the original certificate would release a copy of it, he must attest its conformity to the original one taking upon himself the responsibility for any unlawful or not allowed use. Any alteration and/or falsification will be subjected to the law.

Este certificado se emite mediante sistema computarizado y es válido con firma electrónica. El certificado original posee impreso el logo "Tenaris" color verde. En caso de que el poseedor del certificado entregue una copia, deberá garantizar la conformidad con el original haciéndose responsable por cualquier uso ilegal o no permitido. Cualquier alteración y/o falsificación estará sujeta a la ley.

FOR03171

2" SCH 160 SA-106-B

REVISED TO 2013 EDITION

JAN 9, 2014

BY: MB

COMPONANCE VERIFIED

TO ASME VIII-DIV I

CODE: ED 2010 A 2011

DATE: Sept 12/12

BY: MB

VI QA Approved



INSPECTION CERTIFICATE

(BS EN 10204 3.1: 2004 - ISO 10474 3.1B: 1991)

Number / Número: **659146**
Page / Página: **2 / 6**

Date / Día: **May 08, 2012**

Customer / Cliente: VAN LEEUWEN PIPE & TUBE (CANADA) IN - VAN LEE	Customer's Order Item / Orden Cliente - Item: PO 45001464-00010	Customer's Reference / Ref del Cliente: N/A	Manufacturer's Works Order N° / Confirmación de Venta: 55190707
Manufacturing Process / Proceso de Manufactura: SEAMLESS HOT ROLLED	Product Type / Tipo de Producto: CARBON STEEL PIPE-HIGH TEMPERATURE SERV.	Surface / Superficie: INT BARE/EXT VARNISHED	
Standard or Specification / Normas o Especificaciones: ASTM/ASME A/SA106+CSA Z245.1-07 CAT.I SSPSP00373(1+NACE MR0175/0103+IPRO LP-006	Steel Grade / Grado de acero: B/290 CAT I SS	Cuts / Extremos: BEVELLED AT 30 DEG. ASTM	
Dimensions / Dimensiones: 2 3/8 X 0.344 INCH 60.30 X 8.74 MM	Schedule / Cédula: 160	Nominal Weight / Peso Nominal: 7.46 LB/FT 11.11 KG/M	

CHEMICAL COMPOSITION / COMPOSICIÓN QUÍMICA

		Composition % / Composición %																													
		X 100														X 1000														X 10000	
		C	Mn	Si	Cr	Mo	Al sol	S	P	Ni	V	Cu	Al	Sn	As	Nb	Ti	Pb	Sb	Co	Zr	Bi	Ca	B	N	Mg	W	Co.1	Co.2	F.1	
H	Max	25	135	50	40	15	--	10	30	400	80	400	--	--	--	110	110	--	--	--	--	--	--	10	--	--	--	42	40	99	
	Min	--	29	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
P	Max	25	135	50	40	15	--	10	30	400	80	400	--	--	--	110	110	--	--	--	--	--	--	10	--	--	--	42	40	99	
	Min	--	29	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Heat N°	Sampla N°	20444	1851266	0	1	2	3	12	36	27	100	32	9	5	2	5	2	2	2	7	30	22	20	2	82	3	20	37	37	24.3	
Colada N°	Muestra N°	20444	1851267	0	2	2	--	4	14	35	27	100	30	8	5	3	4	1	2	7	20	22	19	2	85	2	20	37	37	24.2	
20444	1851267	0	2	2	2	2	--	4	14	35	27	100	30	8	5	3	4	1	2	7	20	22	19	2	85	2	20	37	37	24.2	

Co.1: C+(Mn/6)+(Cr+Mo+V)/5+(Ni+Cu)/15
Co.2: F.1: CR+CU+MO+NI+V
C+F((Mn/6)+(S/24)+(Cu/15)+(Cr+Mo+V+Ni)/5)+H: Heat / Coleada

THROUGH WALL HARDNESS / DUREZA EN EL ESPESOR

Required values		Individuals / Individuales				Average / Promedio				Hardness type HV10								Var.					
Valores requeridos		Min. --		Max. --		Var. --		Min. --		Max. 248.0		Var. --		Tipo de dureza								Var.	
Heat N°	Sample N°	Zone	Lot N°	Pipe N°	Tubo N°	Specimen condition		Quad.		OD		MW		ID		Avg.		Var.					
						Zone	Lot N°	Zone	Lot N°	Zone	Lot N°	Zone	Lot N°	Zone	Lot N°	Zone	Lot N°	Zone	Lot N°	Zone	Lot N°	Zone	Lot N°
Coleda N°	Muestra N°	Zona	Lote N°	Zona	Lote N°	Zone	Lot N°	Zone	Lot N°	Zone	Lot N°	Zone	Lot N°	Zone	Lot N°	Zone	Lot N°	Zone	Lot N°	Zone	Lot N°		
20444	1851266	M	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

Avg. Average / Promedio: **148.3**
Ls: Location of sample / Ubicación de la muestra: **Min: Minimum / Mínimo**
Quad: Quadrant / Cuadrante

This certificate is issued by a computerized system and it is valid with electronic signature. On the original certificate the hard-max green colored "Tenaris" is stamped. In case the owner of the original certificate would release a copy of it, he must affix its conformity to the original one taking upon him the responsibility for any unlawful or not allowed use. Any alteration and/or falsification will be subjected to the law.
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FOR03171



INSPECTION CERTIFICATE

(BS EN 10204 3.1: 2004 - ISO 10474 3.1B: 1991)

Page / Página:

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Number / Número:

659146

Date / Día:

May 08, 2012

Customer's Reference / Ref. del Cliente:

N/A

Manufacturer's Works Order N° / Confirmación de Venta:

55190/07

Customer's Order Item / Orden Cliente - Item:

PQ 45001484-00010

Product Type / Tipo de Producto:

CARBON STEEL PIPE-HIGH TEMPERATURE SERV.

Manufacturing Process / Proceso de Manufactura:

SEAMLESS HOT ROLLED

Standard or Specification / Normas o Especificaciones:

ASTM/ASME A5A106+CSA Z245.1-07 CAT.1 SSPSP00373/1+NACE MR0175/103+IPRO LP-006

Dimensions / Dimensiones:

2 3/8 X 0.344 INCH
60.30 X 8.74 MM

Schedule / Cédula:

160

Length / Longitud:

3056.4 FT
931.59 MTS

Quantity / Cantidad:

140 Pcs/pz
23303 LB
10570 KG

Steel Grade / Grado de acero:

B1290 CAT 1 SS

Ends / Extremos:

BEVELLED AT 30 DEG. ASTM

Nominal Weight / Peso Nominal:

7.46 LB/FT
11.11 KG/M

Surface / Superficie:

INT BARE / EXT VARNISHED

THROUGH WALL HARDNESS / DUREZA EN EL ESPESOR

B: Body / Cuerpo

ID: Internal diameter / Diámetro interno

M: Middle / Medio

Max: Maximum / Máximo

MW: Middle wall / Centro

OD: Outside diameter / Diámetro externo

Var: Variation / Variación

BENDING / DOBLEZ

Standard / Norma:

Heat N° / Sample N° / Resultado

Colada N° / Muestra N° / Resultado

20444 / 1851266 / B / Good / Bueno

B: Body / Cuerpo

Ls: Location of sample / Ubicación de la muestra

HYDROSTATIC TEST / PRUEBA HIDRAULICA

Pressure / Presión	Time / Tiempo	Results / Resultado
Unit / Unidad:	Value / Valor	Seconds / Segundos
PSI	3,000	5
		Satisfactory / Satisfactorio

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FOR03171



INSPECTION CERTIFICATE

(BS EN 10204 3.1: 2004 - ISO 10474 3.1B: 1991)

Number / Número:
659146

Date / Día: May 08, 2012

Page / Página:
4 / 6



Customer / Cliente: VAN LEEUWEN PIPE & TUBE (CANADA) IN - VAN LEE		Customer's Order Item / Orden Cliente - Item: PO 45001464-00010		Customer's Reference / Ref. del Cliente: N/A		Manufacturer's Works Order N° / Confirmation de Venta: 55190/07	
Manufacturing Process / Proceso de Manufactura: SEAMLESS HOT ROLLED		Product Type / Tipo de Producto: CARBON STEEL PIPE-HIGH TEMPERATURE SERV.		Surface / Superficie: INT BARE / EXT VARNISHED			
Standard or Specification / Normas o Especificaciones: ASTM/ASME A/SA 106+CSA Z245.1-07 CAT.1 SSPSP00373/1+NACE MR01750103+IPRO LP-006		Steel Grade / Grado de acero: B/290 CAT 1 SS		Ends / Extremos: BEVELLED AT 30 DEG. ASTM			
Dimensions / Dimensiones: 2 3/8 X 0.344 INCH 60.30 X 8.74 MM		Schedule / Cédula: 160		Quantity / Cantidad: 3056.4 FT 931.59 MTS		Nominal Weight / Peso Nominal: 7.46 LB/FT 11.11 KG/M	
Length / Longitud: S.R. (SP)		Length / Longitud: 30 GAUSS		Quantity / Cantidad: 140 Pcs/pz			

SPECIAL REQUIREMENTS / REQUERIMIENTOS ESPECIALES

Condition / Condición	Description / Descripción
Pipe residual magnetism / Magnetismo remanente de tubo	30 GAUSS
End protectors / Protector de extremo	NON LIFTABLE CLOSED PLASTIC PROTECTOR FOR FLAT / BEVELLED PIPE, SUPPLIER METALCENTRO.

SUPPLEMENTARY INFORMATION / INFORMACIÓN SUPLEMENTARIA

Supplementary Information / Información Suplementaria	Supplementary Information / Información Suplementaria
"MANUFACTURED BY TENARIS SIDERCA"	"FABRICADO POR TENARIS SIDERCA"
"ACIERAGE PROCESS"	"PROCESO DE ACERACIÓN"
STEEL MAKING PROCESS: E.A.F.A.F. AND CONTINUOUS CASTING - FULL ALUMINIUM KILLED AND FINE GRAIN PRACTICE.	FABRICACIÓN DE ACERO: FUNDICIÓN POR ARCO ELÉCTRICO Y COLADO CONTINUO - ACERO CALMADO AL ALUMINIO PRACTICA DE GRANO FINO
"THE LF PRACTICE INCLUDES ARGON RINSE AND A FINAL INJECTION OF CALCIUM SILICIDE WIRE FOR MICROINCLUSION SHAPE CONTROL."	LA PRÁCTICA DE AFINO EN EL HORNO - CUCHARA INCLUYE AGITACIÓN POR ARGÓN Y UNA INYECCIÓN FINAL DE VARILLA DE SILICIO DE CALCIO PARA OBTENER UNA FORMA GLOBULAR DE EVENTUALES MICROINCLUSIONES.
"MATERIAL FREE FROM MERCURY CONTAMINATION."	"MATERIAL LIBRE DE CONTAMINACIÓN DE MERCURIO."
"ROLLING PROCESS"	"PROCESO DE LAMINACIÓN"
"MANUFACTURING PROCESS: SEAMLESS HOT ROLLED."	"FABRICACIÓN DE TUBO: LAMINADO EN CALIENTE Y SIN COSTURA."
"CONTROLS"	"CONTROLES"
"VISUAL AND DIMENSIONAL INSPECTION: SATISFACTORY."	"CONTROL VISUAL Y DIMENSIONAL: SATISFACTORIO."
"MATERIAL CONDITIONS"	"CONDICIONES DEL MATERIAL"
"NOT REPAIRED BY WELDING"	"NO REPARADO POR SOLDADURA"
"STANDARDS"	"NORMAS"
"EDITION OF REGULATION: ASTM A 106/A 106M-2011"	"EDICIÓN DE LA NORMA: ASTM A 106/A 106M-2011"
"EDITION REGULATION: ASME SA 106/ 2010"	"EDICIÓN DE LA NORMA: ASME SA 106/ 2010"
"EDITION OF REGULATION: NACE MR-01-03 EDITION 2010"	"EDICIÓN DE LA NORMA: NACE MR-01-03 EDITION 2010"

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FOR03171



INSPECTION CERTIFICATE

(BS EN 10204 3.1: 2004 - ISO 10474 3.1B: 1991)

Number / Número: **559146**
Page / Página: **5 / 6**

Date / Día: **May 08, 2012**

Customer / Cliente: VAN LEEUWEN PIPE & TUBE (CANADA) IN - VAN LEE		Customer's Order / Item / Orden Cliente - Item: PO 45001464-00010		Customer's Reference / Ref. del Cliente: N/A		Manufacturer's Works Order N° / Confirmación de Venta: 5519007	
Manufacturing Process / Proceso de Manufactura: SEAMLESS HOT ROLLED		Product Type / Tipo de Producto: CARBON STEEL PIPE-HIGH TEMPERATURE SERV.		Surface / Superficie: INT BARE / EXT VARNISHED			
Standard or Specification / Normas o Especificaciones: ASTM/A516/A516+CSA Z245.1-07 CAT.1 SSPSP00373/1+NACE MR0175/0103+IPRO LP-006		Steel Grade / Grado de acero: B280 CAT 1 SS		Ends / Extremos: BEVELLED AT 30 DEG. ASTM			
Dimensions / Dimensiones: 2 3/8 X 0.344 INCH 60.30 X 8.74 MM		Schedule / Cédula: 160		Length / Longitud: S.R. (SP)		Nominal Weight / Peso Nominal: 7.46 LB/FT 11.11 KG/M	
		Quantity / Cantidad: 140 Pcs/pz		Quantity / Cantidad: 23303 LB 10570 KG			

SUPPLEMENTARY INFORMATION / INFORMACIÓN SUPLEMENTARIA

Supplementary Information / Información Suplementaria	
EDITION OF REGULATION: NACE MR 01-75 - ISO 15156-2 : 2009	
EDITION OF REGULATION : CSA Z245 : 2007	

Additional Information / Información Adicional	
HEAT TREATMENT: AS ROLLED.	
NON DESTRUCTIVE TEST: SATISFACTORY.	

MARKING / MARCACION

Additional Information / Información Adicional	
INSPECTION METHODS: U.T. LONG. (EXT) NOTCH NOTCH 5% + U.T. LONG. (INT) NOTCH 10% + U.T. TRANSV. (INT/EXT) NOTCH 10% + M.P.I. LONG./TRANSV. (EXT/INT.) ENDS + W.M.P.I. ON BEVELS.	
MARKING / MARCACION	
- @ = Monogram / Monograma API - MMYY = Mes / Año Month / Year - Y/T = Año / Times Year / Quarter - HXXXXX = Colada / Heat	
Stencilling (Pipe) / Estarcido (Tubo)	
CSA Z245.1-07 45001464 MADE IN ARGENTINA HXXXXX NNNNN LLLL PPPPP	

Additional Information / Información Adicional	
HEAT TREATMENT: AS ROLLED.	
NON DESTRUCTIVE TEST: SATISFACTORY.	

Additional Information / Información Adicional	
HEAT TREATMENT: AS ROLLED.	
NON DESTRUCTIVE TEST: SATISFACTORY.	

Additional Information / Información Adicional	
INSPECTION METHODS: U.T. LONG. (EXT) NOTCH NOTCH 5% + U.T. LONG. (INT) NOTCH 10% + U.T. TRANSV. (INT/EXT) NOTCH 10% + M.P.I. LONG./TRANSV. (EXT/INT.) ENDS + W.M.P.I. ON BEVELS.	
MARKING / MARCACION	
- @ = Monogram / Monograma API - MMYY = Mes / Año Month / Year - Y/T = Año / Times Year / Quarter - HXXXXX = Colada / Heat	
Stencilling (Pipe) / Estarcido (Tubo)	
CSA Z245.1-07 45001464 MADE IN ARGENTINA HXXXXX NNNNN LLLL PPPPP	

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INSPECTION CERTIFICATE

(BS EN 10204 3.1: 2004 - ISO 10474 3.1B: 1991)

Number / Numero: **659146**

Page / Página: **6 / 6**

Date / Día: **May 08, 2012**

Customer / Cliente: VAN LEEUWEN PIPE & TUBE (CANADA) IN - VAN LEE		Customer's Order Item / Orden Cliente - Item: PO 45001464-00010		Manufacturer's Works Order N° / Confirmación de Venta: 55190007	
Manufacturing Process / Proceso de Manufactura: SEAMLESS HOT ROLLED		Product Type / Tipo de Producto: CARBON STEEL PIPE-HIGH TEMPERATURE SERV.		Surface / Superficie: INT BARE / EXT VARNISHED	
Standard or Specification / Normas o Especificaciones: ASTM/A506 CSA Z245.1-07 CAT.1 SSPSP00373/1-NACE MR0175/0+03+HPRO LP-006		Steel Grade / Grado de acero: B1290 CAT 1 SS		Ends / Extremos: BEVELLED AT 30 DEG. ASTM	
Dimensions / Dimensiones: 2 3/8 X 0.344 INCH		Length / Longitud: S.R. (SP)		Nominal Weight / Peso Nominal: 7.46 LB/FT	
Schedule / Cédula: 160		Quantity / Cantidad: 140 Pcs/pz		Net Weight / Peso Neto: 11.11 KG/M	

This is to certify that the product described here has been manufactured, sampled, tested, and inspected in accordance with purchaser order requirements. This certificate is not a declaration of origin nor may it be used as a declaration of origin.

Por el presente certificamos que el material aquí descrito ha sido fabricado, muestreado, ensayado e inspeccionado de acuerdo a los requisitos de su orden de compra. Este certificado no es, ni puede ser usado, como una declaración de origen.

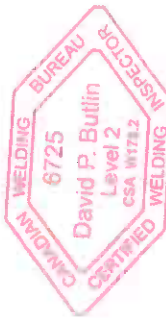
CUSTOMER - THIRD PARTY

TENARIS QUALITY DEPARTMENT SIGNATURE

INSPECTION COMPANY
COMPANIA DE INSPECCION
Company Name: N/A
Employee Name: N/A

QUALITY CERTIFICATION DEPT
DEPTO. DE CERTIFICACIÓN DE CALIDAD
RYALE Jorge

CHIEF OF QUALITY CERTIFICATION DEPT
RESPONSABLE DEL DEPTO. DE CERTIFICACIÓN DE CALIDAD
AYERBE Eduardo



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FOR03171



14527 Smith Rd.
Humble, Texas 77396
TEL: (281) 441-4088
FAX: (281) 441-9899

REPORT NUMBER 77919

DATE 8/15/2013

FCI ORDER NUMBER 61433

Processed I.A.W. EN10204 3.1

I.A.W. NACE MR0175

CUSTOMER ORDER NUMBER 14423
SOLD/SHIPPED TO PENFABCO LTD
5715 56 AVE NW

EDMONTON

AB T6B 3G3

CANADA

Item Quantity Description
1 145 3" X 600 X 9" LG RF LWN

HEAT NUMBER:

Q859

MATERIAL TYPE:

SA105N

I.A.W. ASME 2010 ED 11AD.

CHEMICAL ANALYSISPHYSICAL PROPERTIES

C .200
Mn .920
P .0290
S .0170
Si .230
Cr .085
Mo .010
V .002
Cu .056
Ni .047
Cb .001

Yield PSI 40,030
Tensile PSI 73,099
Elongation 37
Reduction of Area 64
Hardness 149/159 HBW

C E .38

CONFORMANCE VERIFIED
TO ASME VIII-DIV 1
CODE: ED 2010 A 2011
DATE: Aug 19/13
BY: [Signature]

Heat Treatment NORMALIZED
Temperature 1670 °F
Time at Temperature 1/2 HR/IN THK MIN
Cooling Media AIR

REVISED TO 2013 Edition
2027/14 [Signature]

We hereby certify that all test results and process information contained herein are correct and true as contained in the records of the company.

Prepared by

[Signature: Melissa Hernandez]

Name: Melissa Hernandez

Title: QA Representative





ISO 9001:2008

TRILAD Flanges and Fittings, Inc.

30 WOODSLEE AVE.
 PARIS, ON, CANADA N3L 3V1
 (PHONE) 519-442-6520
 (FAX) 519-442-7658
www.tri-lad.com

CERTIFIED MATERIAL TEST REPORT

Certificate No. 13167320	EN 10204 3.1	Date of Report 5/13/2013
---------------------------------	--------------	---------------------------------

Customer ALLIED EDMONTON - CAD\$ 172 TURBO DRIVE SHERWOOD PARK AB T8H 2J6	Customer Order No. 399436	Quantity 2
	Tri-Lad Order No. 573464	Line No. 1

Specification SA105N SECT II 2010 EDITION 2011A ADDENDA	Heat Treatment NORMALISED
Item Description 2 600 WN XXS RF A105N (802003)	Temperature Init 1634 F 890 C
Shop Order/Trace No.	Time N=1.15HRS
Lot No.	Lot Definition
Heat Code TL10005612	
C.E. .42	Mail Practice

Chemical Composition										
	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V
Heat Product	.22	.92	.029	.010	.21	.07	.06	.13	.06	.008
Heat Product										
Heat Product										

Mechanical Properties								Shear Fracture
Yield	Tensile	Elongation	Reduction of Area	Hardness	Impact Test	Impact Values		
Ksi 55 Mpa 382	Ksi 84 Mpa 576	30 %	58 %	BHN 163 BHN 167	Temperature			
Tensile Specimen	STD RD							
Lateral Expansion	Impact Type	Impact Orientation	Starting Material	Impact Specimen				

Notes	CONFORMANCE VERIFIED TO ASME VIII-DIV 1 CODE ED. 2013 DATE: 5/13/14 BY: MB NACE MR0103 LATEST ED. NACE MR0175/ISO15156-09
-------	--

Material is in accordance with the applicable Standard to which it is ordered including:
 ASME Sect II, ASME B16.5, B16.9, B16.36, B16.47, CSA, MSS, AWWA C-207.
 NO WELD REPAIR
 Material conforms to both ASTM (A) and ASME (SA) applicable specifications.
 We hereby certify that all information presented on this CMTR conforms to the above specification.
 We hereby certify the results to be a true copy of the records of the company.

Les Mansfield
 Les Mansfield, CET
 Quality Assurance Manager



4303853

CERTIFIED MILL TEST REPORT



The Best Value
Price, Quality, Service
All The Time.

LOG NO. 326153

PAGE 1

BONNEY FORGE
P.O. BOX 330 • 14496 CROOKMAN PIKE • MOUNT UNION, PA 17066-0330
(610) 542-2045 • (800) 345-7345 • FAX (610) 542-4500
www.bonneyforge.com

CUSTOMER

Date 09/16/08

CUSTOMER'S Order No.

Bonney Order No. 7600039173

SHIPPED TO

REVISED TO 2012 EDITION

MAY 2, 2014

Hy

ITEM QUANTITY LOT NO.

GRADE OR SPECIFICATION NO
CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS

SA/A105N

051 93 4246 7526849 1 6000 A105N COUP T
C .200 MN 1.000 P .008 S .018 SI .210
NI .040 CU .160 CD .003 CR .060 MD .020
V .000 AL .021 NB .014
CE(LONG FORMULA) = 0.40
T/S 77875 Y/S 54875 EL 32.90 RA 65.85
BRINELL HARDNESS1: 132 HARDNESS2: 132

1. THE FITTINGS SUPPLIED ARE IN ACCORDANCE WITH PURCHASE ORDER SPECIFICATIONS.
2. THE MATERIAL SUPPLIED IDENTIFIED AS A105N WAS NORMALIZED IN ACCORDANCE WITH ASTM A105 HEAT TREATING REQUIREMENTS.
3. CERTIFYING ASTM A105-05 / ASME SA105-04 EDITION.
4. ELONGATION TEST RESULTS ARE OBTAINED USING STANDARD ROUND SPECIMEN, 2 INCH OR 50 MM GAGE LENGTH.
5. THE PRODUCT SUPPLIED WAS INSPECTED IN ACCORDANCE WITH EN 10204:2004 EDITION TYPE 3.1 INSPECTION DOCUMENT. (EUROPEAN STANDARD)
6. THE MATERIAL SUPPLIED MEETS THE REQUIREMENTS OF BOTH NACE MR0103-2007 AND NACE MR0179/ISO 15156.

CONFORMANCE VERIFIED

TO ASME VIII-DIV 1

CODE: ED 2007 A 2008

DATE: APR 08/09

BY: [Signature]

REVISED TO 2010

2011

MAY 27, 2012

Hy



***** END OF CERTIFICATION *****

We certify that the data on this sheet is a true copy taken from our records of material furnished us by the production mill or as obtained by additional laboratory checks.

Cris Boozel

CMTR: REV 1

QUALITY PROCESS MANAGER

MILL TEST & INSPECTION CERTIFICATE

ACCORDING TO EN 10204 :2004 3.1

CUSTOMER :

CERT. NO : 132292

ORDER NO : 7006995

INVOICE NO : BW01310205025

L/C NO :

DATE : 07/24/2013

PAGE : 13 ORIGIN : TAIWAN

柏緯鋼鐵工業股份有限公司
BOTH-WELL STEEL FITTINGS CO., LTD.

NO.303, REN-SIN ROAD, REN-SIN DISTRICT, KAOHSIUNG CITY, TAIWAN R.O.C. (81460)
 TEL: +886-7-3711536, 3710497, 3720260 FAX: +886-7-3713864, 3713882
 Web site: <http://www.bothwell.com.tw> e-mail: bo@bothwell.com.tw

INVOICE NO.: BM01310205025										TABLE 13 - CONTINUED									
ITEM	BW HT. CD.	RAW MATERIAL HEAT NO.	DESCRIPTION	QUANTITY	SPECIFICATION FOR		INSPECTION												
					MATERIAL	FITTING		SURFACE	DIM.										
041	4138	336211	TEE 3" 3000# NPT	32 PC	ASTM A105N -12	ASME B16.11 - 2011	GOOD												
042	3843A	X12401602	TEE 4" 3000# NPT	45 PC															
043	3982	330757	FULL CPLG 3/4" 6000# NPT	270 PC	ASME SA105N -A08														
048	3885	330361	FULL CPLG 1-1/2" 6000# NPT	20 PC															
049	3972A	X12201340	CROSS 2" 6000# NPT	3 PC															
ITEM	BW HT. CD.	CHEMICAL COMPOSITION (%)										MATERIAL SUPPLIER							
		C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V					Ch(Nb)	N	Al	Ti
		0.10	0.60	-	-	-	-	-	-	-	-	-	-	-	-	-	0.43		
		0.35	0.35	1.05	0.035	0.040	0.40	0.30	0.40	0.12	0.08	-	-	-	-	-	0.43		
041	4138	0.19	0.20	0.85	0.015	0.008	0.12	0.07	0.06	0.01	0.002	0.001	-	-	-	-	0.360		
042	3843A	0.200	0.240	0.980	0.020	0.008	0.040	0.037	0.031	0.000	0.000	0.000	-	-	-	-	0.375		
047	3982	0.19	0.20	0.82	0.013	0.011	0.12	0.05	0.04	0.01	0.002	0.002	-	-	-	-	0.350		
048	3885	0.21	0.20	0.84	0.011	0.011	0.09	0.06	0.04	0.01	0.002	0.001	-	-	-	-	0.373		
049	3972A	0.19	0.23	0.95	0.013	0.020	0.04	0.03	0.03	0.00	0.00	0.00	-	-	-	-	0.359		
ITEM	BW HT. CD.	MECHANICAL PROPERTIES										HEAT TREATMENT	ADDITIONAL TEST/REMARKS						
		T. S. (KSI)	Y. S. (KSI)	EL. (%)	R of A (%)	Hardness (HBW)(AVG)	Charpy Impact °F / 0 °C			NORM. / AVG.									
		70	36	22	30	-	-	187	1 2 3			1 2 3							
									1 2 3			1 2 3							
041	4138	77.0	53.3	34.8	65.5	143	145	1 2 3			1 2 3								
042	3843A	72.9	50.2	31.2	65.1	143	145	1 2 3			1 2 3								
047	3982	74.2	49.7	36.2	65.3	140	142	1 2 3			1 2 3								
048	3885	76.5	54.3	35.0	61.4	142	144	1 2 3			1 2 3								
049	3972A	74.9	54.1	36.4	64.5	142	145	1 2 3			1 2 3								
WE HEREBY CERTIFY, THAT THE MATERIAL DESCRIBED ABOVE HAS BEEN TESTED AND COMPLIES WITH THE TERMS OF THE ORDER CONTRACT.																			
												C.C. Huang		Y.Y. Chang					
												O.C. MANAGER		INSPECTOR					
												CHEN CHI HUANG		YUAN YAO CHANG					



Ⓢ BW-D0839 REV: 2

CHEN CHI HUANG
 YUAN YAO CHANG
 CODE: ED 2013 A
 DATE: 2013/7/14
 BY: C.C. Huang

3/4" 6000# Full Copy

MILL TEST & INSPECTION CERTIFICATE

ACCORDING TO EN 10204 :2004 3.1

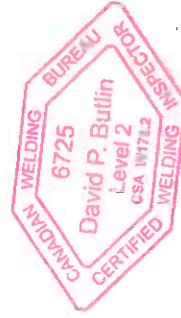
CUSTOMER :
 CERT. NO : 130149
 ORDER NO : 7006405
 INVOICE NO : B70321011137
 L/C NO :
 DATE : 01/21/2013
 PAGE : 20
 ORIGIN : TAIWAN

柏德鋼鐵工業股份有限公司
BOTH-WELL STEEL FITTINGS CO., LTD.
 NO. 303, REN-SIN ROAD, REN-SIN DISTRICT, KAHSIUNG CITY, TAINAN R.O.C. (8160)
 TEL: +886-7-3711536, 3710497, 3720260 FAX: +886-7-3713864, 3713882
 Web site: http://www.bottwell.com.tw e-mail: bot@bottwell.com.tw



ITEM	BW HT. CD.	RAW MATERIAL HEAT NO.	DESCRIPTION	QUANTITY	SPECIFICATION FOR		INSPECTION SURFACE	DIM.									
					MATERIAL	FITTING											
070	3963	331453	90D ELBOW 1-1/2" 6000# NPT	10 PC	ASTM A105 -11	ASME B16.11 - 2011	GOOD	GOOD									
071	3973A	X12201338	90D ELBOW 3" 6000# NPT	5 PC													
072	3933	330045	FULL CPLG 1/2" 6000# NPT	180 PC													
073	3913	330758	FULL CPLG 3/4" 6000# NPT	70 PC													
074	3624A	11109292	CROSS 2" 6000# NPT	80 PC													
ITEM	BW HT. CD.	CHEMICAL COMPOSITION (%)											MATERIAL SUPPLIER				
		C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V	Co(Nb)		N	Al	Ti	Zr
070	3963	0.35	0.10	0.60	-	-	-	0.30	0.40	0.12	0.08	-	-	-	-	-	0.47
071	3973A	0.20	0.20	0.84	0.019	0.008	0.15	0.09	0.05	0.01	0.002	0.001	-	-	-	0.374	
072	3933	0.20	0.23	0.95	0.015	0.010	0.03	0.03	0.03	0.00	0.00	0.000	-	-	-	0.368	
073	3913	0.21	0.20	0.84	0.017	0.011	0.13	0.11	0.05	0.02	0.002	0.002	-	-	-	0.388	
074	3624A	0.19	0.21	0.85	0.013	0.009	0.13	0.05	0.05	0.01	0.002	0.002	-	-	-	0.356	
074	3624A	0.200	0.200	0.990	0.023	0.025	0.040	0.035	0.039	0.000	0.000	0.000	-	-	-	0.377	
ITEM	BW HT. CD.	MECHANICAL PROPERTIES											HEAT TREATMENT		ADDITIONAL TEST/REMARKS		
		T. S. (KSI)	Y. S. (KSI)	EL. (%)	R of A (%)	Hardness (HBB)(AVG)	Charpy Impact F / 0 °C			NORMALIZED		CONFORMS TO NACE MR0175-09 / ISO103-10 STEEL MAKING PROCESS : ELECTRIC FURNACE CONFORMS TO NACE ISO15156-3 2009					
Min	Max	70	36	22	30	187	MIN. / AVG. / (Joule)			860°C A.C.							
							1	2	3					AVG.			
070	3963	78.1	54.1	35.2	65.5	143	141										
071	3973A	75.7	54.1	35.0	68.2	141	143										
072	3933	75.7	51.2	36.0	63.5	142	145										
073	3913	74.4	47.6	37.2	63.5	141	143										
074	3624A	71.3	48.3	35.2	65.5	140	142										
WE HEREBY CERTIFY, THAT THE MATERIAL DESCRIBED ABOVE HAS BEEN TESTED AND COMPLIES WITH THE TERMS OF THE ORDER CONTRACT.														C.C. Huang Q.C. MANAGER CHEN CHI HUANG			
														Y.Y. Chang INSPECTOR YUAN YAO CHANG			

HW-D0839 REV: 2



PERFORMANCE VERIFIED
 TO ASME VII, DIV 1
 CODE: ED2013 A
 DATE: Jan 27/14
 BY: 420

1/2" 6000# Qpdy

Distributor: TRANS-AM PIPING PRODUCTS LTD.

INSPECTION CERTIFICATE

TO EN10204 3.1

Job No.	Purchase Order No.	Job No.
MD 047	CL-12-848	

Thai Benian Co., Ltd.
58 Soi Watkrutai, Bangkru, Prapadaeng,
Samutprakan, 10130 Thailand.

D	M	Y	Certificate No.
02	17	2013	T- 2013180103

No.	MFG. No.	Specification for Material Made from Seamless Pipe ASTM A234-TIASSUE S204-10 GR WPB CSA Z361 (1974) CAN. WARE M80 T450 15152 / 2002	Product & Size (T=1)	Quantity	Heat Treatment (Note 1)	Visual Examination	Dimensional Inspection
1	13E00023	90 EL WPB 12 XS		13/30	A	Good	Good
2	13E00034	45 EL WPB 2 S80		150	A		
3	13E20023	RC WPB 4 X 3 S80		35/100	N	HB : 125 - 140	
4	12P20053	RE WPB 4 X 3 S80		8/49	N	HB : 125 - 140	
5	13E00064	90 EL WPB 2 S160		450/509	A	HB : 120 - 150	

Tension Test #2

YS	TS	E
MPa	%	
240	415	30
665		
374	505	47
318	492	52
323	472	41
303	468	44
289	476	54

HARDNESS MAX
197 HB : GOOD

Chemical Composition %

C	Si	Mn	P	S	Ca	Ni	Mo	V	Nb	C.E.
X	X	X	X	X	X	X	X	X	X	X
160	100	100	1000	1000	100	100	100	1000	1000	100
10	28	106	50	50	40	40	40	15	20	
30	19	85	17	1	2	3	1	<1	<1	34
19	19	84	16	8	2	4	1	0	0	34
19	17	86	15	8	1	2	5	0	0	35
18	16	76	15	6	15	9	16	0	0	36
19	19	84	16	8	2	2	4	0	0	34

Material Heat No.

1	7-32435
2	J3L2833
3	J2K7067
4	775455
5	J3L2833

ORIGINAL

[illegible]

the organization and was found to meet the requirements.

THE UNIVERSITY OF CHICAGO PRESS

C.E. = $C-Mn/64(C+Mn+V)^{1/5}+N(Ca)^{1/15}$

We hereby certify that the product described herein has been ~~manufactured~~ analyzed in accordance with the specifications concerned.

and also with the purchaser's requirements and that the ~~198~~ results shown herein are correct.

Notes for WPB:Form T2-6A/4

THE UNIVERSITY OF CHICAGO

TO ASSESS THE

CONF. EP 2013

DATE: May 14

ed up to a maximum of 1.35%

THE UNIVERSITY OF CHICAGO

Revisina Kampilan

Quality Assurance Manager
Thai Benkan Co., Ltd.



Date: 27-Mar-14
Job #: PE13306
PO #:
Material: C/S

CANADIAN WELDING BUREAU
 6725
 David P. Butlin
 Level 2
 CSA W1782
 CERTIFIED WELDING INSPECTOR

IC - Internal Concavity
LF - Lack of Fusion
LC - Low Cover
MA - Misalignment
TI - Tungsten Inclusion

Interpretation by:

DOUG COENE (Print)	SNT-TC-1A	3
	C.G.S.B.:	2 (Level)
	C.G.S.B. #:	4976

(Signature)

Client Representative:

(Print) **MARK CHARRETTE**

I am in full agreement with report contents

(Sign) 

IRISNDT-E-20040

Exposure Device #: D6306 Source #: 10583C
 Gamma Type: I-192 EFSS: 0.655
 Film Brand: Agfa #Film/cassette: 1
 Code: ASME Sec III Div 1 UW51

Job / P.O. #: PE-13306 IRISNDT #: 1401939 Date: Mar 10/14
 Client: Penfabco
 Location: Edm
 Item: 1" THK LS Material: PI

Film #	Size, Location, Thickness	Welder ID	IRISNDT Tech	SOD Inches	OFD Inches	# of Exp.	Work Location	Film Type	Type and Location of Discontinuities (circle rejectable discontinuities)	Accept	Reject
X-LS1	0.15	4/K	RT2	20	1.125	1	1	D7		✓	
	15.30									✓	
	30.45									✓	
	45.60									✓	
	60.75									✓	
	75.90									✓	
	90.105									✓	
	105. end									✓	



Number of Radiation Barrier Warning Signs Erected _____ Number of Radiation Barrier Warning Signs Returned _____

Work Location Legend (insert number): [1] Inside Fab. Shop [2] Yard/Lay-down Area [3] Piping/Modular Fab. Area [4] N/A (Other)

IRISNDT Technique: Single Wall Exposure: RT 1, 2, 2A, 6, 7 Double Wall Exposure: RT 3, 3A, 4, 5, 8
 S.O.D. = Source to object distance (D)
 O.F.D. = Distance from source side of object to film (d)
 AB - Arc Burns BT - Burn Through CK - Crack EP - Excessive Penetration P - Porosity EI - Elongated Indication
 EUC - External Undercut IUC - Internal Undercut HB - Hollow Bead IP - Incomplete Penetration S - Slag
 IC - Internal Concavity LF - Lack of Fusion LC - Low Cover MA - Misalignment TI - Tungsten Inclusion

Unit #: 303 Kilometres: _____
 In _____ Out _____ Hrs. _____
 In _____ Out _____ Hrs. _____
 Personnel: A
OS

Film Quantity: 8.31 x 17 D7

Interpretation by: Colin Savage SNT-TC-1A II
 (Print) Colin Savage C.G.S.B. # 1746
 (Signature) Colin Savage C.G.S.B. # 1746
 Client Representative: MURRAY ANDERSON
 I am in full agreement with report contents: } (Print) _____
 (Signature) _____

BLUE DIAMOND DESIGN LTD
220 HART ROAD
VICTORIA BC V9C 1A1

Date: February 3, 2014
Account #: 8747
Journal #: 58898
Our File #: 5484448

Attn: PHIL DADE

Re: Application for Design Registration

The design, as detailed in your, Ref: 4365, for a Pressure Vessel is accepted for registration as follows:

Registered To: PENFABCO LIMITED **CRN:** V7840.21

MDMT: -20 deg F

MAWT: 130 deg F

MAWP: 1440 psig

Drawing #: PE-15002 shts 1, 2

Drawing Revision: 3

Conditions Of Registration:

Registration revision of a 24" Generic Vessel.

This design was registered based on a technical review performed by the province of initial registration in accordance with the Association of Chief Inspectors policy on reciprocal recognition of design review.

Contact me if you have any questions. The invoice for registration will be forwarded under separate cover.

SHARON PETERS
(778) 396-2027
Sharon.Peters@safetyauthority.ca
Design Administration

cc:





330 - 1855 Victoria Avenue
Regina, SK S4P 3T2
Canada

306-787-1443
info@tsask.ca
www.tsask.ca

REGISTRATION APPROVAL

15-Jun-12

Penfabco Ltd.
5715 - 56th Ave. NW
Edmonton, AB
T6B 3G3

Our File 45901 [0V]

ATTENTION : Marg Bazin

With reference to your submission respecting the registration of the item below, for legal use in the province, please note we have surveyed, approved and registered this design as noted.

MANUFACTURER :		Penfabco Ltd.	
ITEM :	DRAWING NUMBER :	CRN:	
Generic Vessel	PE-15002 SHTS 1,2 REV. 1/1	V7840.23	

We wish to point out that every vessel must be constructed strictly in accordance with the registered design.

In addition to stamping every vessel with the registration number given above and as required in CSA Code B51, a Manufacturer's Data Report must be forwarded to this office immediately at the time a vessel is shipped. Such forms may be obtained upon request.

Sincerely,

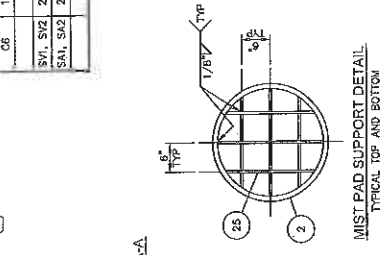
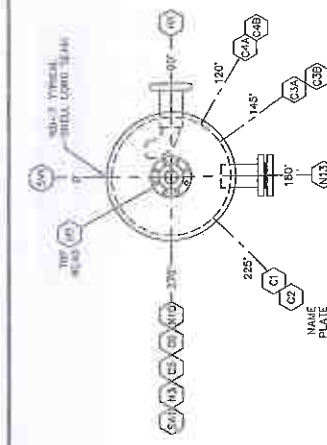
Steven Court

Codes and Standards Compliance



REMARKS: CRN registered under reciprocal agreement.

 RT & W		MANUFACTURED & CERTIFIED BY PENFABCO LTD. EDMONTON AB 	
PE 133 02		V7840,213	
SERIAL NO.		C.R.N.	
MAWP	1440	PSI AT	130
INTERNAL	EXTERNAL	INTERNAL	EXTERNAL
MDMT	-20	°F AT	1440
		PSI C.A.	125
(A) 636452			20 YEAR



ITEM	QTY	COMMENTS	DESCRIPTION	MATERIAL
1	2	HEAD - 10" O.D.	PLATE - 2" SCH STD (3/8" MIN) 2:1 SE, 2" SF	SA-516-70N
2	1	SHIELD	PLATE - 3/4" THK x 10" O.D. LG	SA-516-70N
3	1	SHORT	PIPE - 2" SCH STD (175") x 16 1/4" LG	SA-106-B
4				SHOP CHECK
5	1	NIO	PLATE - 2" SCH STD 600 RFWN - SCH 160 BORE	SA-105N
6	1	N3	PLATE - 2" CLASS 600 RFWN - SCH XHR BORE	SA-105N
7	6	N1,N2,1,N3,1,N4	FLANGE - 3" CLASS 600 RF LWN x 8" LG	SA-105N
8	1	N14	FLANGE - 3" CLASS 600 RF BLIND	SA-105N
9				
10	1	C1	COUPLING - 1/2" NPT CLASS 6000 FULL	SA-105N
11	5	C2, C3, C4, C5	COUPLING - 3/4" NPT CLASS 6000 FULL	SA-105N
12	2	C5	COUPLING - 1" NPT CLASS 6000 FULL	SA-105N
13				
14	1	N16	GASKET - 3" CLASS 600 SPIRAL WOUND x 1/8" THK	316 SS
15	15	N15	STUDS - 3/4" DIA x 5" LG 5/8" 2 NUTS EACH (SA-194-2H)	SA-193-B7
16				
17	1	N3	PIPE - 2" SCH 160 (345") x CUT TO SUIT	SA-106-B
18	1	N3	PIPE - 2" SCH XHR (345") x CUT TO SUIT	SA-106-B
19				
20	1	N10	ELBOW - 2" SCH 160 (345") LR 90° WELD	SA-234-NP6B
21	1	N1	ELBOW - 3" SCH STD (218") LR 90° WELD	SA-234-NP6B
22				
23	2	N3	VORTEX BRKR	Q40.21 - 44W
24	1		FLAT. SHIELD	Q40.21 - 44W
25	1		MIST PAD SUPPORT	Q40.21 - 44W
26	1		MIST PAD	316L SS
27				
28	1		STANDARD NAME PLATE AND BRACKET	SS / SA-36

1	14-03-10	ISSUED FOR APPROVAL	P.D...	MB
0	14-03-06	ISSUED FOR APPROVAL	P.D...	MB
REV	DATE	REVISION	BY	APP

PENFABCO LTD.

5715 - 56 AVENUE NW, EDMONTON, AB T6B 3G3
 TELEPHONE: (780) 434-0222 FAX: (780) 438-1487

CUSTOMER: HUSKY C/O RAY GAS FIELD SERVICES JOB 13-5244-1

DATE: 14-03-05

JOB NO: 4424

DRAWN BY: P.D...

CHECKED BY: MB

APP. BY: P.D...

3 PHASE SEPARATOR - SWEET

24" OD x 10'-0" S/S

1440 PSIG AT -20° F / 130° F

DWS NO:

PE-13306

1

(2) UNITS REQUIRED

JOB NOS:
PE-13306
PE-13307

APPROVED FOR CONSTRUCTION

BY: MB DATE: March 14

DESIGN NOTES

DESIGN & FABRICATE TO ASME SECTION VIII, DIVISION 1, 2013 EDITION
MAXIMUM ALLOWABLE WORKING PRESSURE (MAWP): 1440 PSIG [9923 kPa]
MINIMUM DESIGN TEMPERATURE (MDMT): -19.1°C AT 1440 PSIG [9923 kPa]
RADIATION TESTS: EMBAY, PER-207 F (-19.1°C) AT 1440 PSIG [9923 kPa]
IMPACT TESTS: FULL PER-10 STUDS PER FULL PER-10 NOTE C
PHANT PER UCS-56: NOT REQUIRED PER UW-11.6(b) (P-2)
HYDROSTATIC TEST PRESSURE: 2160 PSIG [14,993 kPa]
CORROSION ALLOWANCE: 7 (163.2)
WEIGHT OF WATER: 5,550 LBS

GENERAL NOTES

- QUALITY CONTROL PROGRAM NUMBER:** ADP-1046(3)
PROJECT NUMBER: ADP-1046
CAPACITY: 29.9 TIS (882 m³)
SERVICES: SOOT HYDROCARBONS
CROSSING OF CLIMATE LIFT
BY RAY - SURFACE PREPARATION: SFC-SG-COMMERICAL
BY RAY - PRIME COAT 4 mil PAINT: URETHANE 3 ml
CLEAR AND TOP COAT OPENINGS FOR SUPPLEMENT
USE MOLDING PROCEDURE P-30 FOR ALL TACK WELDS.
NON-LOW HUMIDITY ELECTRODES INCLUDING 50% PROHIBIT
CON DRAWINGS: PE-15002-2 REV 3 CONR. 77060121
CALCULATIONS: PE-13506-2

ELEVATION VIEW
SEE ORIENTATION VIEW A-A FOR TRUE ORIENTATION

BLUE PRINTING DESIGN LTD. 220 HAYT ROAD, VICTORIA, BC V8C 1A1 TEL: 381-4112 FAX: 380-0880

FORM U-1A MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS A 636452

(Alternative Form for Single Chamber, Completely Shop or Field Fabricated Vessels Only)
As Required by the Provisions of the ASME Boiler and Pressure Vessel Code Rules, Section VIII, Division 1

1. Manufactured and certified by: PENFABCO LTD 5715 - 56 Avenue NW, Edmonton, AB T6B 3G3 Canada
(Name and address of Manufacturer)

2. Manufactured for: RJV Gas Field Services 4901 Bruce Road Vegreville, AB T9C 1C3
(Name and address of Purchaser)

3. Location of installation: Stock
(Name and address)

4. Type: Vertical PE-13306 V7840.213 Shts 1 & 2 N/A 2014
(Horizontal or vertical tank) (Manufacturer's serial number) (CRN) (Drawing number) (National Board number) (Year Built)

5. The chemical and physical properties of all parts meet the requirements of material specification of the ASME BOILER AND PRESSURE VESSEL CODE. The design, construction, and workmanship conform to the ASME rules, Section VIII, Division 1 2013
Year

to N/A N/A N/A
{addenda(date)} (Code Case numbers) {Special Service per UG-120(d)}

6. Shell: SA-516-70N 1.00" 1/8" 22" 8' 0" s/s
(Material spec. number, grade) (Nominal thickness) (Corr. Allow.) (inner diameter) (length overall)

7. Seams: Type 1 Full 100% N/A N/A Type 1 Spot 70% 1
[Long. (welded, dbl., singl., lap, butt)] [R.T. (spot or full)] [Eff., %] H.T. temp. (Time, hr) [Girth. (welded, dbl., singl., lap, butt)] [R.T. (spot or full)] [Eff., %] (No. of courses)

8. Heads: (a) Material SA-516-70N (b) Material SA-516-70N
(Spec. no. grade) (Spec. no. grade)

	Location (Top, Bottom, Ends)	Thickness		Radius		Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
		Min.	Corr.	Crown	Knuckle					
(a)	Top	.9375"	1/8"	N/A	N/A	2:1	N/A	N/A	N/A	Concave
(b)	Bottom	.9375"	1/8"	N/A	N/A	2:1	N/A	N/A	N/A	Concave

If removable, bolts used (describe other fastening) N/A
(Material spec. number grade, size, number)

9. MAWP 1440 psi N/A at max temp. 130°F N/A
(Internal) (External) (Internal) (External)

Min. design metal temp. -20°F at 1440 psi Hydro. , pneu. or comb. test pressure Hydrostatic 2160 psi

Proof Test N/A

10. Nozzles, inspection, and safety valve openings:

Purpose (Inlet, Outlet, Drain, etc)	No.	Diam. or Size	Type	Material		Nozzle Thickness		Reinforcement Material	Attachment Details		Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
Inlet, Gas Out, LC's, HLSD, Insp	6	3" ID	CL 600 RFLWN	SA-105N	N/A	.81"	1/8"	Not Required	UW16.1(c)	N/A	Shell, Top Hd
Drain	1	NPS 2	CL 600 RFWN	SA-106B	SA-105N	.436"	1/8"	Not Required	UW16.1(c)	Type 1	Bottom Head
PSV, Vent/Insp	2	NPS 2	CPLG	SA-105N	N/A	CL6000	1/8"	Not Required	UW16.1(a)	N/A	Shell
HC, Water Outlets	2	NPS 1	CPLG	SA-105N	N/A	CL6000	1/8"	Not Required	UW16.1(a)	N/A	Shell
LG's, TI	5	NPS 3/4	CPLG	SA-105N	N/A	CL6000	1/8"	Not Required	UW16.1(a)	N/A	Shell
PI	1	NPS 1/2	CPLG	SA-105N	N/A	CL6000	1/8"	Not Required	UW16.1(a)	N/A	Shell

11. Supports: Skirt Yes Lugs 0 Legs 0 Others None Attached Welded to Btm Hd
(Yes or No) (Number) (Number) (Describe) (Where and how)

12. Remarks: Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report: N/A
(List the name of part, item number, Manufacturer's name and identifying stamp)

Impact Test exempt per UG -20(f) 1-5 & UCS-66(c) RT per UW-11(a)5(b)
Volume 28.9 cu.ft. (.82 m3) PSV Installed in Piping by Others per UG-125(g)
Vertical Separator Manufactured to Dwg. PE-13304 Rev 1



CERTIFICATE OF SHOP/FIELD COMPLIANCE

We certify that the statements made in this report are correct and that all details of design, material, construction and workmanship conform to the ASME Boiler and Pressure Vessel Code, Section VIII, Division 1. "U" Certificate of Authorization Number 14,383

expires 12/28, 2016

Date 03/27/14 Co. Name PENFABCO LTD Signed M. Bayen
(Manufacturer) (Representative)

CERTIFICATE OF SHOP/FIELD INSPECTION

Vessel constructed by PENFABCO LTD at 5715 - 56 Avenue NW Edmonton, AB T6B 3G3
I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of Alberta and employed by ABSA

have inspected the component described in this Manufacturer's Data Report on March 27, 2014, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME Boiler and Pressure vessel Code, Section VIII, Division 1. By signing this certificate neither the Inspector nor his/her employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his/her employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date Mar 27, 2014 Signed [Signature] Commissions AB 95 NB 12143 A,B
(Authorized Inspector) [National Board (incl endorsements) State, Province and number]